KC HARVEY

August 31, 2010

Ms. Kathy Brown
Wyoming Department of Environmental Quality
510 Meadowview Drive
Lander, WY 82520

Re: REMEDIAL ALTERNATIVES EVALUATION - TRIBAL PAVILLION 24-3

Dear Ms. Brown:

EnCana Oil & Gas USA Inc. (EnCana) has prepared this REMEDIAL ALTERNATIVES EVALUATION REPORT for the Tribal Pavillion (TP) 24-3 Voluntary Remediation Program (VRP) location. This report is divided into five generalized categories for each location including:

- Project Background
- Targeted Soil Remediation Activity
- Groundwater Contaminant Distribution and Characterization
- Groundwater Remedial Action Alternatives
- Recommended Remedy

Please contact Mike Larson at (406) 585-7402 (ext. 14) or Andrea Taylor at (307) 857-4600 with any questions or comments.

Sincerely,

Michael Larson
Principal Scientist
KC Harvey Environmental, LLC.

Cc: D. Stewart, EnCana
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EXECUTIVE SUMMARY

In 2006, EnCana voluntarily initiated site assessment work for the TP 24-3 natural gas well location where the historic use of unlined pits was identified. The facility was officially placed under the Wyoming Department of Environmental Quality (DEQ) Voluntary Remediation Program (VRP) following review of the first round of groundwater monitoring results in October, 2006. The site is currently owned by Pavillion Land Development LLC although a pending landowner change was scheduled to take place during the summer of 2010. EnCana actively operates the natural gas well.

Site assessment activities have included the installation and semi-annual monitoring of nine monitoring wells (MW-1 through MW-9) and installation of 22 Geoprobe borings from which soil and/or groundwater total hydrocarbon concentrations were measured. These activities, along with review of a historic aerial photograph, indicated that hydrocarbon liquids had leaked from a single rectangular-shaped pit located south of the separators. Constituents of concern (COCs) being evaluated include diesel and gasoline range organics (DROs and GROs), benzene, toluene, ethylbenzene and xylenes (BTEX compounds).

A targeted soil remediation source removal involved excavation of approximately 1,000 cubic yards of hydrocarbon impacted soil from the area exhibiting the most elevated hydrocarbon concentrations during assessment activities. Dimensions of the excavation were approximately 60 ft by 35 ft by 12 ft deep. The excavation was located immediately south of monitoring well MW-1 and north of monitoring well MW-2. Soil confirmation samples collected from the excavation walls and floor along with eight trenches dug to a depth of at least eight ft on the excavation perimeter provided confirmation of successful removal of the majority of the hydrocarbon targeted source area. A portion of impacted soil near MW-2 was not removed due to severe slumping of the pit wall which threatened worker safety and the integrity of the monitoring well.

Groundwater monitoring data show that a hydrocarbon plume persists down gradient of the excavated area. There is also evidence that residual hydrocarbons at the groundwater surface are seasonally re-mobilized and measured in samples collected from MW-7. No deleterious impacts have been measured at sentinel well MW-8 and no human receptors have been identified down gradient of the known source area for up to one mile. One unoccupied residence is located approximately 0.3 of a mile northwest of the location; however, the groundwater flow direction is to the southeast, which minimizes or eliminates the potential risk for this residence as a receptor.

EnCana proposes Monitored Natural Attenuation as the recommended groundwater remediation alternative to implement at TP 24-3 with Enhanced Monitored Natural Attenuation as a contingency alternative.

Based on the Wyoming DEQ's acceptance of this preferred remedy, EnCana will initiate specific tasks to collect data to be used to determine the status of microbial degradation of hydrocarbons. In addition, geochemical data will allow an evaluation of patterns of contaminant concentrations and natural attenuation indicator parameters. Following compilation and evaluation of the data, assessment findings will be reported at least semiannually to support the selection of this alternative. These data will also provide evidence for the primary mechanism for reducing contaminant concentrations and include an estimated timeframe for achieving the potential remediation objective. Further development of the TP 24-3 site conceptual model to support the MNA groundwater remediation alternative's effectiveness will also be a focus. A remedial action plan will be developed.

1.0 INTRODUCTION

This report describes the remedial alternatives evaluation for the Tribal Pavillion (TP) 24-3 location (Figure 1). The report presents summary information of all soil and groundwater data collected to date and provides relevant information for determining the best suited groundwater treatment option. In addition, the report contains a subsection describing groundwater sampling and analysis planned for future monitoring events at the site.

2.0 TP 24-3 BACKGROUND

In 2006, EnCana voluntarily initiated site assessment work for the TP 24-3 facility location along with approximately thirty other Pavillion-area natural gas well locations where the historic use of unlined pits was identified. Hydrocarbon groundwater impacts were detected and attributed to a release that likely occurred over several years beginning in 1965 when the natural gas well was drilled. The pathway for hydrocarbon migration to groundwater likely consisted of an open pit subsurface release and subsequent vertically downward migration. In addition, site soils in the vicinity of the historic pit may have also been impacted with hydrocarbons during reclamation and regrading operations.

Based on the nature and extent of soil and groundwater petroleum hydrocarbons observed, the TP 24-3 facility was officially placed under the Wyoming Department of Environmental Quality (DEQ) Voluntary Remediation Program (VRP) following review of the first round of groundwater monitoring results in October, 2006. The data indicated that a groundwater volatile organic compound (VOC) plume was present on site.

Site assessment activities have included the installation of nine monitoring wells (MW-1 through MW-9) to monitor and characterize groundwater (Figure 2). The main focus of the soil and groundwater data collection program was to determine the nature and extent of hydrocarbons for the TP 24-3 location.

2.1 Legal Description and Ownership

The TP 24-3 surface location (SW 1/4 of Section 3, Township 3N, Range 2E) is currently owned by Pavillion Land Development LLC with a pending landowner change. EnCana actively operates the natural gas well (Figure 1). Figure 2 illustrates a plan view of the TP 24-3 facility including natural gas well-related equipment, the targeted soil excavation area delineation, monitoring well locations, groundwater elevations, and the estimated groundwater flow direction.

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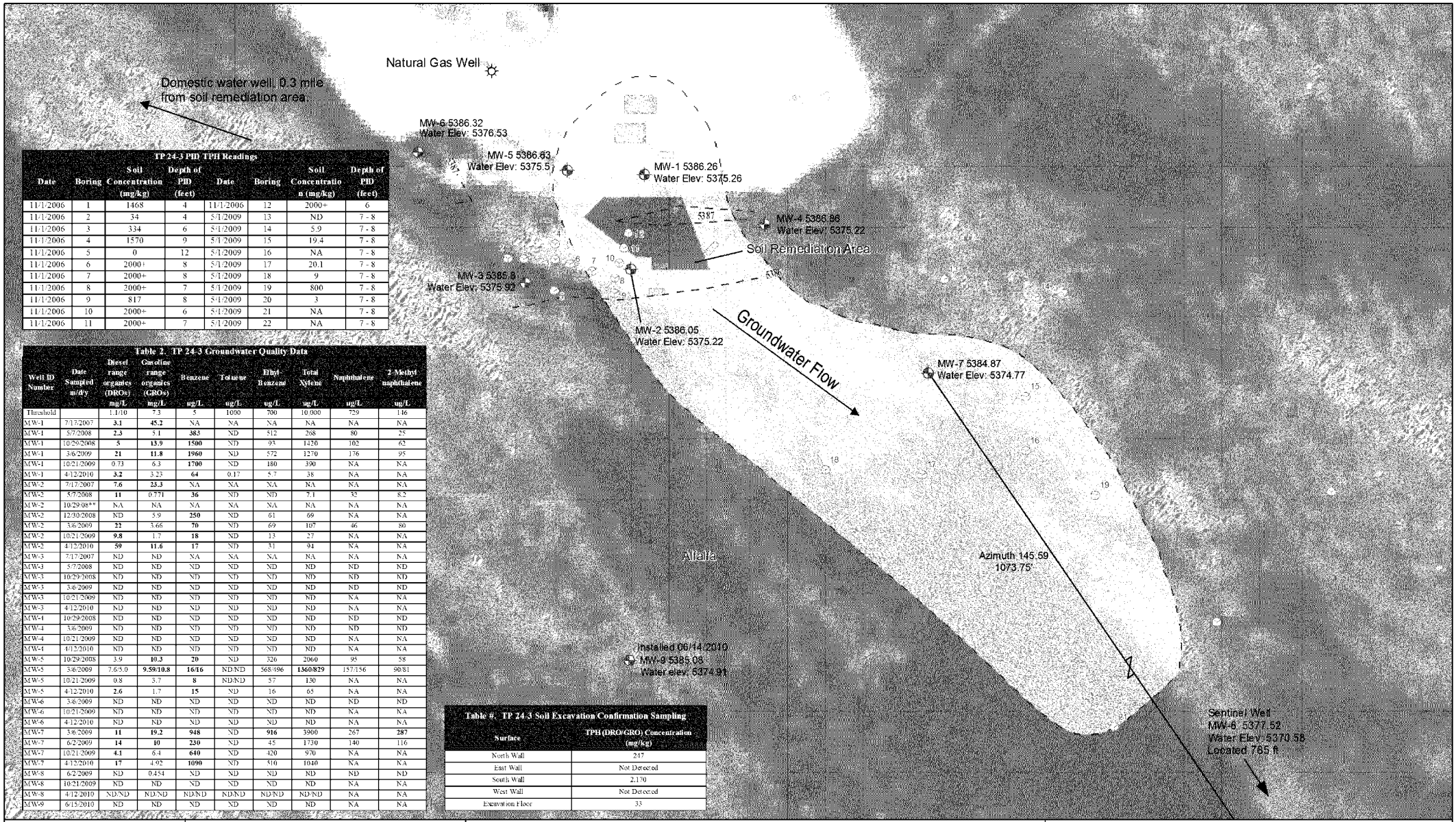
Background: 2009 NAIP Aerial Photography

EnCana Oil & Gas USA, Inc.

Pavillion VRP
Figure 1: General Site Location
TP 24-3

Date: August 16, 2010

Version: 2010-1



TP 24-3 PID TPH Readings

Date	Boring	Soil Concentration (mg/kg)	Depth of PID (feet)	Date	Boring	Soil Concentration (mg/kg)	Depth of PID (feet)
11/1/2006	1	1468	4	11/1/2006	12	2000+	6
11/1/2006	2	34	4	5/1/2009	13	ND	7 - 8
11/1/2006	3	334	6	5/1/2009	14	5.9	7 - 8
11/1/2006	4	1570	9	5/1/2009	15	19.4	7 - 8
11/1/2006	5	0	12	5/1/2009	16	NA	7 - 8
11/1/2006	6	2000+	8	5/1/2009	17	20.1	7 - 8
11/1/2006	7	2000+	8	5/1/2009	18	9	7 - 8
11/1/2006	8	2000+	7	5/1/2009	19	800	7 - 8
11/1/2006	9	817	8	5/1/2009	20	3	7 - 8
11/1/2006	10	2000+	6	5/1/2009	21	NA	7 - 8
11/1/2006	11	2000+	7	5/1/2009	22	NA	7 - 8

Table 2. TP 24-3 Groundwater Quality Data

Well ID Number	Date Sampled m/d/y	Diesel range organics (DROs) mg/L	Gasoline range organics (GROs) mg/L	Benzene ug/L	Toluene ug/L	Ethyl-Benzene ug/L	Total Xylene ug/L	Naphthalene ug/L	2-Methyl naphthalene ug/L
Threshold		1.1/10	7.3	5	1000	700	10,000	729	146
MW-1	7/17/2007	**3.1**	**45.2**	NA	NA	NA	NA	NA	NA
MW-1	5/7/2008	**2.3**	5.1	**383**	ND	512	268	80	25
MW-1	10/29/2008	**5**	**13.9**	**1500**	ND	93	1420	102	62
MW-1	3/6/2009	**21**	**11.8**	**1960**	ND	572	1270	176	95
MW-1	10/21/2009	0.73	6.3	**1700**	ND	180	390	NA	NA
MW-1	4/12/2010	**3.2**	3.23	**64**	0.17	5.7	38	NA	NA
MW-2	7/17/2007	**7.6**	**23.3**	NA	NA	NA	NA	NA	NA
MW-2	5/7/2008	**11**	0.771	**36**	ND	ND	7.1	32	8.2
MW-2	10/29/08**	NA	NA	NA	NA	NA	NA	NA	NA
MW-2	12/30/2008	ND	5.9	**250**	ND	61	69	NA	NA
MW-2	3/6/2009	**22**	3.66	**70**	ND	69	107	46	80
MW-2	10/21/2009	**9.8**	1.7	**18**	ND	13	27	NA	NA
MW-2	4/12/2010	**59**	**11.6**	**17**	ND	31	94	NA	NA
MW-3	7/17/2007	ND	ND	NA	NA	NA	NA	NA	NA
MW-3	5/7/2008	ND	ND	ND	ND	ND	ND	ND	ND
MW-3	10/29/2008	ND	ND	ND	ND	ND	ND	ND	ND
MW-3	3/6/2009	ND	ND	ND	ND	ND	ND	ND	ND
MW-3	10/21/2009	ND	ND	ND	ND	ND	ND	NA	NA
MW-3	4/12/2010	ND	ND	ND	ND	ND	ND	NA	NA
MW-4	10/29/2008	ND	ND	ND	ND	ND	ND	ND	ND
MW-4	3/6/2009	ND	ND	ND	ND	ND	ND	ND	ND
MW-4	10/21/2009	ND	ND	ND	ND	ND	ND	NA	NA
MW-4	4/12/2010	ND	ND	ND	ND	ND	ND	NA	NA
MW-5	10/29/2008	3.9	**10.3**	**20**	ND	326	2060	95	58
MW-5	3/6/2009	7.6/5.0	**9.59/10.8**	**16/16**	ND/ND	568/496	**1360/829**	157/156	90/81
MW-5	10/21/2009	0.8	3.7	**8**	ND/ND	57	130	NA	NA
MW-5	4/12/2010	**2.6**	1.7	**15**	ND	16	65	NA	NA
MW-6	3/6/2009	ND	ND	ND	ND	ND	ND	ND	ND
MW-6	10/21/2009	ND	ND	ND	ND	ND	ND	NA	NA
MW-6	4/12/2010	ND	ND	ND	ND	ND	ND	NA	NA
MW-7	3/6/2009	**11**	**19.2**	**948**	ND	**916**	3900	267	**287**
MW-7	6/2/2009	**14**	**10**	**230**	ND	45	1730	140	116
MW-7	10/21/2009	**4.1**	6.4	**640**	ND	420	970	NA	NA
MW-7	4/12/2010	**17**	4.92	**1090**	ND	510	1040	NA	NA
MW-8	6/2/2009	ND	0.454	ND	ND	ND	ND	ND	ND
MW-8	10/21/2009	ND	ND	ND	ND	ND	ND	NA	NA
MW-8	4/12/2010	ND/ND	ND/ND	ND/ND	ND/ND	ND/ND	ND/ND	NA	NA
MW-9	6/15/2010	ND	ND	ND	ND	ND	ND	NA	NA

Table #. TP 24-3 Soil Excavation Confirmation Sampling

Surface	TPH (DRO/GRO) Concentration (mg/kg)
North Wall	247
East Wall	Not Detected
South Wall	2,170
West Wall	Not Detected
Excavation Floor	33

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0 25 50 100 Feet

Monitoring Wells
Boring
Gas Well
Topographic Contour
Separator
Test Trench
Soil Remediation Area
Estimated Benzene Groundwater Plume

Labeled values shown in feet

Background: 2009 NAIP Aerial Photography

EnCana Oil & Gas USA, Inc.

Pavillion VRP
Figure 2: Soil and Groundwater Assessment Location
TP 24-3

Date: August 18, 2010 | Version: 2010-3

2.2 Constituents of Concern

The primary source material for soil and groundwater contamination at this site is related to unlined pit storage of hydrocarbon liquids. Review of a historic aerial photograph prior to initial site assessment activities revealed a single rectangular-shaped pit footprint south of the separators. Hydrocarbon liquids contained in the pit likely consisted of some combination of drilling and separation fluids, produced water, and condensate.

As expected, soil assessment and remediation activities revealed that residual hydrocarbon source material was primarily found in the subsurface in the vicinity of the pit location where hydrocarbon liquids storage took place. The constituents of concern (COCs) being evaluated therefore include diesel and gasoline range organics (DROs and GROs), benzene, toluene, ethylbenzene and xylenes (BTEX compounds). BTEX compounds are detectable in the GRO range and are biodegradable under both aerobic and anaerobic conditions. DROs are also biodegradable under both aerobic and anaerobic conditions. Both DROs and GROs continue to be assessed for regulatory compliance purposes.

2.3 Soil Characterization

Soil profiles were described at 12 locations during the 2006 Geoprobe borehole installation at TP-24-3. Additional profiles were described during the 2009 Geoprobe investigation when 10 boreholes were installed (Figure 2). Soils were described to the full depth of the borings which ranged from 12 to 20 feet in depth. The water table was intercepted in all borings and varied in depth from 7 to 10 feet below ground surface (bgs).

Topsoil at TP-24-3 generally consists of loamy sand to sandy loam textured soil typically 6 to 8 inches deep with areas of more shallow topsoil. Subsoil horizons are mainly comprised of brown loamy sand although a lens of clay loam was observed in the 1-to-7 foot depth increment in one boring. Soil structure is generally subangular blocky in the upper horizons to a depths of about 1.5 to 4 feet with massive structure below. No coarse fragments were observed throughout the profile in any boring. Besides increased moisture content, soils below the water table did not appear to differ from those above. The upper depth increments where hydrocarbons were first encountered varied between about 5 to 8 feet. The deepest extent of observed hydrocarbons was about 15 feet, although in some borings the thickness of hydrocarbon staining was less than a couple feet or absent altogether.

Table 1 presents photoionization detector (PID) readings for Geoprobe borings installed in 2006 and 2009 as well as data for groundwater samples collected from eight of the borings installed in 2009.

2.4 Soil Remediation Effort

The targeted soil remediation source removal involved excavation of approximately 1,000 cubic yards of hydrocarbon impacted soil in a polygon-shaped area centered about 60 ft south of the separators (Figure 2). This specific area was targeted because it exhibited the most elevated hydrocarbon readings during the geoprobe and trenching assessment, and also in previous groundwater monitoring results for monitoring wells MW-1 and MW-2. The TP 24-3 aerial image showing the historic pit location was also referenced prior to excavation activities.

Table 1. TP 24-3 PID Total Petroleum Hydrocarbon Readings

Date	Boring	Soil Concentration (mg/kg)	GRO [1] – Water (mg/L)	DRO [2] – Water (mg/L)	Depth of PID (ft)
11/1/2006	1	1468	NA	NA	4
11/1/2006	2	34	NA	NA	4
11/1/2006	3	334	NA	NA	6
11/1/2006	4	1570	NA	NA	9
11/1/2006	5	0	NA	NA	12
11/1/2006	6	2000+	NA	NA	8
11/1/2006	7	2000+	NA	NA	8
11/1/2006	8	2000+	NA	NA	7
11/1/2006	9	817	NA	NA	8
11/1/2006	10	2000+	NA	NA	6
11/1/2006	11	2000+	NA	NA	7
11/1/2006	12	2000+	NA	NA	6
5/1/2009	13	ND	ND	ND	7 - 8
5/1/2009	14	5.9	ND	15	7 - 8
5/1/2009	15	19.4	ND	7.5	7 - 8
5/1/2009	16	NA	NA	NA	7 - 8
5/1/2009	17	20.1	ND	16	7 - 8
5/1/2009	18	9	ND	27	7 - 8
5/1/2009	19	800	NA	NA	7 - 8
5/1/2009	20	3	ND	ND	7 - 8
5/1/2009	21	NA	ND	ND	7 - 8
5/1/2009	22	NA	ND	ND	7 - 8

[1] GRO = Gasoline Range Organics
[2] DRO = Diesel Range Organics

Dimensions of the excavation were approximately 60 ft by 35 ft by 12 ft deep. The excavation was located immediately south of monitoring well MW-1 and north of monitoring well MW-2. In addition, eight trenches were dug to a depth of at least eight ft on the excavation perimeter to provide lateral confirmation of successful removal of the hydrocarbon targeted source area (Figure 2).

2.5 Nature and Distribution of Hydrocarbon Impact in Soil

Once impacted soil was excavated, confirmation composite soil sampling was performed on each wall and the floor of the excavation "footprint" to confirm representative concentrations of total petroleum hydrocarbons DROs and GROs. Each composite sample consisted of 5-8 subsamples representing each of the five surface areas. The samples were compared to soil cleanup level goals of <1,000 mg/kg in accordance with the Wyoming Oil and Gas Conservation Commission (WYOGCC) risk-based pit closure guidance.

All surfaces met the 1,000 mg/kg cleanup goal except for the south wall (3,170 mg/kg) (Table 2). Excavation of the south wall was limited due to geotechnical instability which caused dangerous, frequent, and unpredictable sloughing of the pit wall. This sloughing posed hazards to worker safety and threatened to compromise the integrity of monitoring well MW-2 and other utilities that were located and marked prior to excavation. Due to these conditions and the fact

that the majority of total source material had been removed during excavation of the primary pit area, it was decided to cease excavation activities within 12 ft of monitoring well MW-2.

Table 2. TP 24-3 Soil Excavation Confirmation Sampling

Surface	TPH (DRO/GRO) Concentration (mg/kg)
North Wall	247
East Wall	Not Detected
South Wall	3,170
West Wall	Not Detected
Excavation Floor	33

2.6 Monitoring Well Network

The current well network at the site consists of nine total wells including MW-1 through MW-9 as shown in Figure 2. Monitoring well MW-9, located 250 ft south of monitoring well MW-2, was installed most recently on June 15, 2010. This network of monitoring wells, installed in four separate time intervals, allowed definition and tracking of potential migration of the hydrocarbon groundwater plume at TP-24-3. Monitoring wells MW-1, -2, and -3 were installed north, south, and southwest of the historic pit footprint. Monitoring wells MW-4, -5, -6, and -7 were installed after the completion of soil excavation/remediation activities in an effort to further delineate the extent of the hydrocarbon groundwater plume. Wells installed during this phase are located somewhat more distant from the excavated area with MW-6 and -7 being about 150 and 200 feet to the northwest and southeast, respectively.

Groundwater samples collected from MW-7 indicated that this well was located inside the contaminant plume. This observation triggered the installation of an eighth monitoring well (MW-8) in June 2009. MW-8 was installed as a sentinel well about 1,000 feet southeast of MW-7 to confirm that the hydrocarbon plume had not migrated beyond the field entrance.

The fourth and final phase of well installation occurred in June 2010 with the installation of MW-9. This well is located about 250 feet south of the excavation footprint in an area thought to be southwest of and outside the hydrocarbon plume. This well was installed to evaluate whether the southwestern edge of the plume extends further westward than believed based on existing groundwater quality and flow direction data.

2.7 Monitoring Well Sampling

Monitoring wells are sampled upon completion and then twice per year; in the spring time, typically between March and May, and a fall sampling event in October. Groundwater samples collected from the TP-24-3 monitoring wells are analyzed for DRO, GRO, BTEX, naphthalene, and 2-methylnaphthalene. Monitoring has been performed six times for monitoring wells MW-1, -2, and -3, four times for MW-4, -5, and -7, three times for MW-6, -7 and -8, and once for MW-9. Following data review of hydrocarbon contaminant distribution in 2008 and 2009, the primary data gap identified was lack of southeast and southwest west delineation of the groundwater hydrocarbon plume. Identification of these groundwater contamination distribution data gaps has resulted in installation of monitoring wells MW-4 through MW-9, as discussed above in Section 2.6.

Sampling results for all sampling events and all monitoring wells are presented in Table 3 (inset to Figure 2).

2.8 Hydrogeology

Drill logs from the project site indicate that the sandy loam surface soil is underlain by a 10 to 20 ft thick layer of alluvial/sandstone sedimentary bedrock. This is consistent with general aquifer descriptions provided for the Tribal Pavilion area by USGS (2005) that report shallow local aquifers consisting of alluvial, colluvial, terrace, pediment, landslide, glacial, and travertine deposits. These aquifers are generally less than 50 feet thick but can be as thick as 200 feet. Water yields from these aquifers range from 2 to 60 gpm and with total dissolved solids concentrations that range from 109 to 4,630 mg/L.

Local aquifers in the Pavillion area are underlain by the Tertiary Wind River Formation. In places, local aquifers are separated from the Wind River Formation by leaky confining layers of the Wiggins, Tepee Trail, and Aycross formations.

2.8.1 Groundwater Flow Direction

Groundwater elevations measured during monitoring events have shown groundwater moves in a predominantly southeast direction, although one groundwater elevation monitoring event performed in May 2008 indicated a lesser flow component in the west direction.

2.8.2 Groundwater Velocity

The horizontal hydraulic conductivity (Kr) of an aquifer can be estimated based on data collected during slug tests of a monitoring well. During a slug test, water is rapidly added to or removed from a monitoring well and the subsequent change in water level is monitored regularly during the time it takes for the water level to re-equilibrate to a static level. Curves of the water level/head change over time, along with parameters describing the well (i.e. radius, screened length, etc), and the saturated thickness of the aquifer are then used in calculations to arrive at an estimate of Kr (i.e., groundwater velocity).

Slug testing of monitoring well MW-5 at TP-24-3 was conducted in November 2009 (Trihydro 2009). Raw data from the slug test were input into the aquifer test software Aqtesolv to calculate Kr using two different methods; 1) the Bouwer-Rice (1976) method and 2) KGS (Butler 1998) method. The two methods differ mainly in the way each matches a curved or straight line to measured slug test data.

Both methods arrived at the same value for Kr, 0.08 ft/day. This value is at the lower end of the average range for both unconsolidated silt (0.00028 and 5.6 ft/day) and fine sand (0.056 and 56 ft/day) reported by Domenico and Schwartz (1990) as would be expected considering the sandy loam soils that were described for this site during well installation and Geoprobe boring investigations.

2.9 Groundwater Hydrocarbon Concentrations

Summary statistics have been calculated for MW-1, MW-2, MW-5, and MW-7; the four monitoring wells where COCs are routinely detected (Table 3). COCs have not been detected in monitoring wells MW-3, MW-4, MW-6, or MW-9 and only one low-level GRO detection has occurred at MW-8 (Table 3).

The highest concentrations of petroleum hydrocarbons at the site are observed in monitoring wells MW-1 and MW-7 although concentrations at MW-1 generally appear to be decreasing while increases are observed at MW-7, based on recent sampling data.

Benzene was observed at concentrations equal to or greater than 250 ug/L at monitoring well MW-2 once in 2008 while such concentrations are consistently measured at MW-7, located approximately 225 ft southeast of monitoring well MW-2. Benzene concentrations at MW-1 peaked at a maximum value of 1,960 ug/L in March 2009 followed by a sharp decrease to 64 ug/L measured in April 2010. Benzene concentrations at MW-2 and MW-5 have also displayed decreases from maximum values measured in fall 2008 (250 to 17 ug/L and 20 to 15 ug/L, respectively). Benzene concentrations at MW-7 have increased steadily from June 2009 (230 ug/L) through the most recent monitoring event in April 2010 (1,090 ug/L).

Benzene concentrations measured at MW-1, MW-2, and MW-7 increased for a varying amount of time following excavation activities. The mechanism for an increase in petroleum hydrocarbon concentrations following targeted source removal has not been identified. However, it is noted that targeted impacted soil removal was limited to within a distance of approximately 12 ft of existing utilities and monitoring wells MW-1 and MW-2 locations.

As described in Section 3.3, groundwater samples were also collected from Geoprobe boreholes with obvious visible staining found along a narrow elliptical shaped area extending southeast from the MW-7 monitoring well location (Figure 2). Specific Geoprobe boreholes (#15, #16, and #19) revealed an obvious hydrocarbon stained smear zone in the upper most saturated zone composed of a gravelly loamy sand layer present at a depth of 6-8 ft below ground surface. Out of eight groundwater samples collected from Geoprobe boreholes for analysis of total petroleum hydrocarbon GROs and DROs, four samples exhibited positive detections in the DRO hydrocarbon range while the GRO range was not detectable. The highest DRO concentration of 27 mg/L was detected at boring #18 followed in order by borings #17 (16 mg/L) and #14 (15 mg/L).

Table 3. TP 24-3 Groundwater Quality Data Summary

		Date Sampled m/d/y	DRO [1]	GRO [2]	Benzene	Toluene	Ethyl-Benzene	Total Xylene	Naph-thalene	2-Methyl-naphthalene
			mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L
MW-1	Data	Threshold [3]	1.1/10	7.3	5	1000	700	10,000	729	146
		7/17/2007	**3.1**	**45.2**	NA	NA	NA	NA	NA	NA
		5/7/2008	**2.3**	5.1	**383**	0	512	268	80	25
		10/29/2008	**5**	**13.9**	**1500**	0	93	1420	102	62
		3/6/2009	**21**	**11.8**	**1960**	0	572	1270	176	95
		10/21/2009	0.73	6.3	**1700**	0	180	390	NA	NA
		4/12/2010	**3.2**	3.23	**64**	0.17	5.7	38	NA	NA
	Summary Statistics	Minimum	0.7	3.2	64.0	0.0	5.7	38.0	80.0	25.0
		Maximum	21.0	45.2	1960.0	0.2	572.0	1420.0	176.0	95.0
		Mean	5.9	14.3	1121.4	0.0	272.5	677.2	119.3	60.7
		Mean (Fall)	2.9	10.1	1600.0		136.5	905.0	102.0	62.0
		Mean (Spring)	7.4	16.3	802.3	0.1	363.2	525.3	128.0	60.0

[1] D.R.O. = Diesel Range Organics
[2] G.R.O. = Gasoline Range Organics
[3] Threshold for DROs assumed to be 1.1 mg/L
[4] Well damaged during backfilling operations; no sample collected.
Averages of natural and duplicate sample data used in calculations when available.
Non-detect values reported as zeros and calculated as such in summary statistics.

Table 3 (continued). TP 24-3 Groundwater Quality Data Summary

		Date Sampled m/d/y	DRO [1]	GRO [2]	Benzene	Toluene	Ethyl-Benzene	Total Xylene	Naph-thalene	2-Methyl-naphthalene
			mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L
MW-2	Data	Threshold	1.1/10	7.3	5	1000	700	10,000	729	146
		7/17/2007	**7.6**	**23.3**	NA	NA	NA	NA	NA	NA
		5/7/2008	**11**	1.8	**36**	0	0	7.1	32	8.2
		10/29/08 [4]	NA	NA	NA	NA	NA	NA	NA	NA
		12/30/2008	0	5.9	**250**	0	61	69	NA	NA
		3/6/2009	**22**	3.7	**70**	0	69	107	46	80
		10/21/2009	**9.8**	1.7	**18**	0	13	27	NA	NA
		4/12/2010	**59**	**11.6**	**17**	0	31	94	NA	NA
	Summary Statistics	Minimum	0.0	1.7	17.0	0.0	0.0	7.1	32.0	8.2
		Maximum	59.0	23.3	250.0	0.0	69.0	107.0	46.0	80.0
		Mean	18.2	8.0	78.2		34.8	60.8	39.0	44.1
		Mean (Fall)	4.9	3.8	134.0		37.0	48.0		
		Mean (Spring)	24.9	10.1	41.0		33.3	69.4	39.0	44.1
MW-5	Data	Threshold	1.1/10	7.3	5	1000	700	10,000	729	146
		10/29/2008	**3.9**	**10.3**	**20**	0	326	2060	95	58
		3/6/2009	**6.3**	**10.2**	**16**	0	532.0	**1094.5**	156.5	85.5
		10/21/2009	0.8	3.7	**8**	0	57	130	NA	NA
		4/12/2010	**2.6**	1.7	**15**	ND	16	65	NA	NA
	Summary Statistics	Minimum	0.8	1.7	8.0	0.0	16.0	65.0	95.0	58.0
		Maximum	6.3	10.3	20.0	0.0	532.0	2060.0	156.5	85.5
		Mean	3.4	6.5	14.8		232.8	837.4	125.8	71.8
		Mean (Fall)	2.4	7.0	14.0		191.5	1095.0	95.0	58.0
		Mean (Spring)	4.5	5.9	15.5		274.0	579.8		
MW-7	Data	Threshold	1.1/10	7.3	5	1000	700	10,000	729	146
		3/6/2009	**11**	**19.2**	**948**	0	**916**	3900	267	**287**
		6/2/2009	**14**	**10.0**	**230**	0	45	1730	140	116
		10/21/2009	**4.1**	6.4	**640**	0	420	970	NA	NA
		4/12/2010	**17**	4.92	**1090**	0	510	1040	NA	NA
	Summary Statistics	Minimum	4.1	4.9	230.0	0.0	45.0	970.0	140.0	116.0
		Maximum	17.0	19.2	1090.0	0.0	916.0	3900.0	267.0	287.0
		Mean	11.5	10.1	727.0	0.0	472.8	1910.0	203.5	201.5
		Mean (Fall)	4.1	6.4	640.0	0.0	420.0	970.0	NA	NA
		Mean (Spring)	14.0	11.4	756.0	0.0	490.3	2223.3	203.5	201.5

[1] D.R.O. = Diesel Range Organics
[2] G.R.O. = Gasoline Range Organics
[3] Threshold for DROs assumed to be 1.1 mg/L
[4] Well damaged during backfilling operations; no sample collected.
Averages of natural and duplicate sample data used in calculations when available.
Non-detect values reported as zeros and calculated as such in summary statistics.

The estimated plume contour map shown in Figure 2 is primarily based on analytical results from monitoring wells MW-1 through MW-9 although groundwater results obtained from the Geoprobe assessment were also considered. Geoprobe boring groundwater and soil monitoring summary results are shown in Table 1. Actual laboratory data from the most recent sampling event is provided in Attachment 1.

2.10 Groundwater Characterization

The east/southeast groundwater flow direction and non-detect benzene concentrations observed at monitoring well MW-4 may indicate a residual source of hydrocarbons is contributing to impacts exhibited at monitoring well MW-7. This source is likely a "smear zone" influenced by a shallow (less than 10 ft bgs) alluvial gravel layer. The alluvial gravel layer would have contributed to increased mobility and transport of hydrocarbons from the unlined pit area prior to soil remediation activities. These transported hydrocarbons would then have adsorbed to less porous aquifer materials near the surface of the water table where they are subsequently exposed to periodic remobilization due to fluctuating seasonal groundwater levels.

The presence of such an impacted alluvial zone was confirmed during the Geoprobe investigation based on borings #15, #16, #17, and #19 which revealed obvious staining and hydrocarbon odors. Conversely, hydrocarbon staining or odor was not noted in the unsaturated zone in the upper soil profile. Soil samples were collected at seven locations where visible soil staining was observed at the depth where groundwater was encountered (Table 1).

Based on the groundwater plume map, the width of the hydrocarbon groundwater impacts where groundwater hydrocarbon concentrations exceed regulatory thresholds is estimated to be approximately 520 ft long by 160 ft wide (Figure 2). The contour illustrates that the groundwater hydrocarbon plume extends southeast (down gradient) from the primary source area by about 400 ft although as the dissolved hydrocarbons move farther southeast from the source area, levels have decreased due to dispersion and dilution over time. Eventually the contaminant concentrations are reduced to acceptable concentrations so low that the risk to human and environmental health is minimal.

The unlined storage pit would have allowed the hydrocarbon liquids to flow primarily vertically under the influence of gravity, through the sandy loam textured soils, although to a lesser extent, capillary forces would have resulted in some lateral spreading. The dissolved-, vapor-, and adsorbed-phase soil hydrocarbon concentrations within and surrounding the soil source area have likely decreased over the years due to biodegradation processes.

Groundwater in the shallow aquifer occurs between about 9 ft to 11 ft bgs. With regard to groundwater, if sufficient volumes of hydrocarbon liquids released to the subsurface reached the shallow (less than 11 ft bgs) water table, a capillary fringe saturated with hydrocarbon product can form. Seasonal water table fluctuations, especially in this area where annual irrigation practices were historically practiced adjacent to the site, can cause the hydrocarbon product to create a smear zone immediately above and below the fluctuating water table mainly within or near the primary source area. Down gradient groundwater flow would then mix and transport the dissolved phase hydrocarbons toward the southeast. Eventually, at some point down gradient of the source area, the groundwater impacted with hydrocarbons will naturally attenuate through microbial degradation processes.

Figure 3 illustrates the trends in benzene concentrations detected in site monitoring wells versus time (i.e., 2-3 years). Hydrocarbon concentration trend analysis is a means of monitoring

progress. The plot shows the level of hydrocarbons since the initial site assessment phase and following the soil remediation effort that was performed in October 2008.

Five or more data points are generally regarded as the minimum for estimating temporal data trends. The fewer the number of data sets, the greater the potential for error. The benzene trend plot also provides an indication of outliers, or extreme observations, in the data. If there are, it is important to determine whether they reflect a real departure from the general trend.

This plot will ultimately provide an estimate of natural attenuation success and plume morphology over time. In addition, concentration data will eventually be plotted on a logarithmic scale against time on a linear scale to capture both large and small changes.

No human receptors have been identified down gradient of the known source area for up to one mile. One unoccupied residence is located approximately 0.3 of a mile northwest of the location; however, the groundwater flow direction is to the southeast, which minimizes the potential risk for this residence as a receptor.

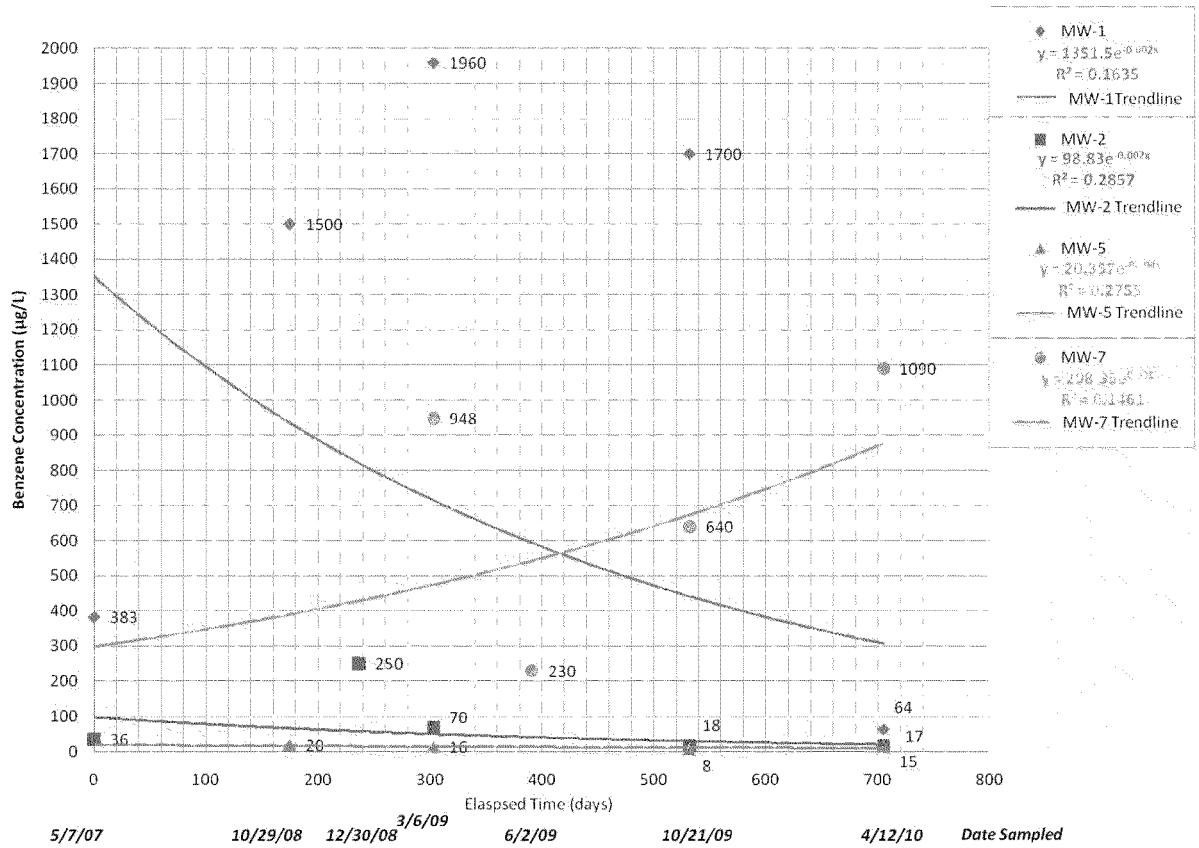

Figure 3. TP 24-3 Benzene Trend Analysis Plot

3.0 DEVELOPMENT OF REMEDIAL ACTION ALTERNATIVES

3.1 Remedial Action Objectives (RAOs)

Remedial action objectives for the TP-24-3 are as follows:

- Reduction of all groundwater COCs to levels at or below the cleanup levels described below within a reasonable time period; and
- Collection of sufficient monitoring data over time to demonstrate that remediation is effective and progressing at a reasonable rate and is not being hindered by on-going sources or unfavorable conditions.

Groundwater COCs were identified and associated cleanup levels for groundwater have been established for TP-24-3 (Tables 4 and 5). Groundwater cleanup levels for the site were selected from the VRP Soil and Groundwater Cleanup Level Tables in consideration of VRP Fact Sheet #12, Appendix: Cleanup Levels for Total Petroleum Hydrocarbons (TPH) in Soil and Groundwater and VRP Fact Sheet #13 Groundwater Cleanup Levels.

The selected groundwater cleanup levels meet the four threshold criteria established in the EQA W.S. 35-11-1605(a):

- Be protective of human health and the environment;
- Comply with applicable standards;
- Control the source(s) of release to reduce or eliminate, to the extent practicable, further releases of contaminants; and
- Comply with applicable standards for waste management.

Table 4. Groundwater Cleanup Levels for Volatile Organic Compounds (VOCs)

Product Parameter/Constituent	Cleanup Level (ug/L)
Benzene	5
Toluene	1,000
Ethylbenzene	700
Xylenes	10,000

Table 5. Groundwater Cleanup Levels for Petroleum Hydrocarbon Contamination

Product	Parameter/Constituent	Cleanup Level
Gasoline	TPH, GRO	7.3 mg/L [a]
	Naphthalene [d]	0.729 mg/L
	2-Methylnaphthalene [d]	0.146 mg/L
Diesel/Crude Oil	TPH DRO [b]	1.1 mg/L [b]
	TPH DRO [c]	or 10 mg/L [c]
	Naphthalene [d]	same as gasoline
	2-Methylnaphthalene [d]	same as gasoline

[a] Cleanup level based on protection of groundwater for non-cancer effects during drinking water use (Drinking Water Equivalent Level (DWEL) equation, Chapter 17 Wyoming Water Quality Rules and Regulations).

[b] Cleanup level based on protection of groundwater for non-cancer effects during drinking water use (Drinking Water Equivalent Level equation, Chapter 17 Wyoming Water Quality Rules and Regulations). This level is applicable when naphthalene and/or methylnaphthalenes along with the other chemicals of concern are detected in groundwater above Maximum Contaminant Level (MCL)/Wyoming Drinking Water Equivalent Level (DWEL) (assuming that reporting limits are adequate in comparison to cleanup levels) OR when there is free product present on the groundwater table.

[c] Cleanup level based on Chapter 4 and Chapter 17, Wyoming Water Quality Rules and Regulations. This level is applicable when naphthalene and/or 2-Methylnaphthalene along with the other chemicals of concern are below MCL/DWEL concentrations in groundwater AND no free product is present on the groundwater table.

[d] These constituents are required for confirmation sampling on a site specific basis as described in Section 4 of VRP Fact Sheet #12, Appendix: Cleanup Levels for Total Petroleum Hydrocarbons (TPH)

*If naphthalene and BTEX concentrations are below the cleanup levels and free product is not present on the groundwater table, then TPH-GRO plus TPH-DRO must be equal to or less than 10 mg/L (action level).

3.2 Remedial Action Alternatives

Recent groundwater data collection has been performed to develop a site conceptual model and evaluation of remedial options for the TP 24-3 location. Several data gaps were addressed to facilitate the selection and design of a groundwater remedy including the installation of monitoring well MW-9 to establish the southwestern groundwater plume boundary. The data collection program also included groundwater sampling and analyses of geochemical parameters and hydraulic well testing and data interpretation. In addition, to better understand site conditions, the following characteristics were evaluated:

- Soil characteristics;
- Seasonal depth and flow direction of groundwater;
- General properties of the aquifer including background water quality;
- Location of hydrocarbon source areas relative to the overall site;
- Description and distribution of soil and groundwater hydrocarbons; and
- Estimated distance to human and ecological receptors.

In EnCana's opinion, the TP 24-3 groundwater remedy should be consistent with the level of risk associated with the known impacts. As such, the preferred remedial treatment of groundwater impacted by hydrocarbons at TP 24-3 is supplemented with the following components:

- Hydrocarbon releases have been controlled and there are no known continuing releases;
- Targeted source removal of approximately 1,000 cubic yards of contaminated soil was completed in October 2008;
- The extent of the hydrocarbon plume is well defined based on the monitoring well network and overall groundwater aquifer hydraulic characteristics; and
- There are no down gradient receptors within approximately one mile of the TP 24-3 location.

To support the selection of the preferred groundwater remedial options for the TP 24-3, two general approaches are described below for purposes of comparison including (i) source removal with monitored natural attenuation (MNA) or enhanced MNA (EMNA) and (ii) source removal with in situ chemical oxidation.

3.3 Monitored Natural Attenuation (MNA)

Natural attenuation, or the reduction of mass, toxicity, mobility, volume, flux or concentrations of contaminants in soil or groundwater without human intervention, occurs through a number of physical, chemical and/or biological process. The use of passive groundwater remediation options (e.g., MNA) is consistent with DEQ and USEPA's initiatives provided certain conditions are met as defined below:

> *"the reliance of natural attenuation processes (within the context of a carefully controlled and monitored site cleanup approach) to achieve site-specific remedial objectives within a time frame that is reasonable compare to that offered by other more active methods" (USEPA OSWER, 1997).*

Natural attenuation, also commonly called biodegradation, of petroleum hydrocarbons (e.g., site compounds such BTEX compounds) occurs through their use by microorganisms as primary sources of carbon and energy. The degradation of petroleum hydrocarbons occurs most effectively under aerobic (oxygen reducing) conditions. However, biodegradation of petroleum hydrocarbons under anaerobic conditions may also be effective in degrading the total mass (Wiedemeier & Pound, 1998). Attenuation also occurs through dilution/dispersion, which in many cases is the primary mechanism for natural attenuation at a site. These physical processes of natural attenuation reduce concentrations when finite amounts of mass of contaminants migrate into an ever increasing volume of groundwater (dilution) or as contaminants are spread into groundwater by chemical diffusion (movement due to concentration gradients) and dispersion (Wiedemeier & Pound, 1998).

3.4 Enhanced Monitored Natural Attenuation (EMNA)

The distinction between MNA and EMNA is that MNA involves demonstrating that natural attenuation processes are resulting in the mass loss of hydrocarbons in the groundwater and therefore decreasing the aerial distribution of the plume. In comparison, EMNA involves enhancing existing rates of mass removal of hydrocarbons by amending groundwater with nutrients (e.g., sulfate) to increase the rate and extent of microbial degradation processes. For example, groundwater with elevated sulfate concentrations can be introduced to specific monitoring wells as an electron acceptor to support the anaerobic oxidation of hydrocarbons in groundwater.

3.5 Chemical Oxidation

In situ chemical oxidation involves the delivery of chemical oxidants to hydrocarbon-impacted groundwater where oxidation reactions can cause carbon-to-carbon bonds within the hydrocarbon molecules to be broken. These reactions convert hydrocarbons to innocuous compounds such as carbon dioxide and water.

A number of oxidizing reagents are available for use in remediation projects (e.g. permanganate KMn_4, sodium persulfate $Na_2S_2O_8$, ozone O_3, hydrogen peroxide H_2O_2, Fenton's Reagent, etc). Each oxidant must be evaluated for effectiveness and feasibility prior to use during remediation projects. For instance, permanganate is unable to oxidize benzene while Fenton's Reagent may be ineffective in carbonate-rich aquifers. Because of oxidant-specific and site-specific factors discussed below, the ultimate feasibility of a chemical oxidation remediation program is usually evaluated using bench- or field-scale pilot studies.

The effectiveness of chemical oxidation to reduce hydrocarbon concentrations is influenced by a number of site-specific factors. Oxidation reactions are non-specific and a portion of chemical oxidants will be consumed through oxidation of naturally occurring organic matter, reduced mineral species, or overcoming other reducing chemical conditions within an aquifer. In these settings, increased amounts of chemical oxidants are needed to overcome the natural "oxidant demand" while degrading the target contaminant.

Some chemical oxidants, such as Fenton's Reagent, owe some or all of their effectiveness to the generation of hydroxyl ions (OH-) as an intermediate step to oxidizing hydrocarbons. In carbonate-rich (i.e. high alkalinity) environments similar to the TP 24-3 conditions, hydroxyl ions are scavenged by carbonate ions before degradation of hydrocarbon contaminants can occur. In contrast, oxidation by permanganate is generally enhanced in high-carbonate settings.

Soil and aquifer permeability must also be evaluated to determine the feasibility of a chemical oxidation remediation strategy. In low permeability environments oxidants may be inactivated before reaching the hydrocarbons targeted for remediation.

A number of health and safety factors need to be considered when evaluating the feasibility of chemical oxidation for groundwater remediation programs. One concern in the Tribal Pavillion area is the presence of underground utilities that are often within the boundary of contaminant plumes. Some chemical oxidants such as persulfate and peroxide can be corrosive and may present a hazard to underground pipelines. Oxidant delivery methods may involve extremely high pressures and, in some cases (e.g. when using peroxide or Fenton's Reagent), may result in highly exothermic conditions and generation of explosive gases that could pose hazards to pipelines and other underground utilities.

The interaction between chemical oxidants and geologic materials must be considered where down gradient receptors are sensitive to increased inorganic constituent concentrations in groundwater. Many naturally occurring elements (i.e. arsenic, iron, chromium, copper, selenium) become more soluble under oxidized conditions and can be mobilized into groundwater at concentrations above applicable water quality standards. Potassium permanganate and sodium permanganate, two common chemical oxidants, often contain arsenic, chromium, and lead as impurities.

Oxidation reactions may also dissolve or remobilize hydrocarbons that were previously immobilized through sorption to the aquifer matrix.

Additional concerns include worker health and safety during transport and handling of the chemical oxidants. High implementation costs are also a drawback with $200,000 being a fairly typical cost for relatively small sites (e.g. 100' x 100' site with a leaking UST) and costs in excess of $1 million are not unheard of.

Chemical oxidation-based remediation projects are considerably more complex than monitored natural attenuation (MNA) and enhanced monitored natural attenuation (EMNA) projects. Implementation of any of these strategies requires monitoring of groundwater conditions, reporting, and permitting activities. However, chemical oxidation requires additional inputs of chemical oxidants and associated infrastructure (e.g. injection wells, storages tanks) which can be costly and burdensome from transport and health and safety standpoints. Unlike chemical oxidation, MNA and EMNA pose no hazards to underground utilities and do not require additional pilot-scale studies or delays related to identifying suitable reactants.

3.6 Evaluation of Remedial Action Alternatives

The three potential remedial actions presented in this report (i.e. monitored natural attenuation, enhanced monitored natural attenuation, and chemical oxidation) were evaluated with respect to the four standards presented in VRP Fact Sheet # 21. All remedies under the voluntary remediation program must:

- Protect human health, safety, and the environment.
- Remediate contaminated air, soil, and water to attain applicable cleanup levels established under Federal or State law or regulation or to attain site-specific risk-based cleanup levels developed for the site in question.
- Control any sources of releases so as to reduce or eliminate, to the extent technically practicable, further releases as required to protect human health and the environment.
- Comply with any applicable standard for management of wastes generated as a consequence of the remedy.

Threats to human health, safety, and the environment attributable to the hydrocarbon plume at TP 24-3 are limited to the potential for contamination of downgradient private wells if the plume migrates off-site at concentrations that are harmful to human or livestock health. No such concentrations have been measured at sentinel well MW-8 indicating that the plume has not moved off-site.

If monitoring confirms that MNA or EMNA is effective at reducing or maintaining hydrocarbon concentrations within the perimeter of the current plume, and hydrocarbon concentrations at MW-8 remain at current non-detect levels, then either of these remediation alternatives would be effective at preventing threats to human health, safety, and the environment.

Chemical oxidation strategies could also be protective of human health, safety, and the environment as such strategies may offer active treatment of hydrocarbons, potentially reducing concentrations in a shorter time compared to MNA or EMNA processes. However, as discussed in Section 4.5, implementation of a chemical oxidation program could itself pose hazards to public health and safety. Of particular concern, if current non-detect hydrocarbon concentrations at monitoring well MW-8 are due to adsorption of hydrocarbons to the aquifer matrix, oxidation reactions may desorb the hydrocarbons resulting in greater mobilization of the plume and increased threats to down gradient receptors. Health and safety of workers and

nearby residents is also of concern if oxidation reactions compromise the integrity of underground gas lines or associated facilities.

The 2008 targeted soil excavation activities are believed to have removed the majority of hydrocarbon contaminated soil that was the source of contaminant loading to groundwater (Section 3.5) leaving in place only small isolated zones of impacted soil where excavation would not have been safe or effective. Therefore, with regard to item #3 above, control of the hydrocarbon source has already occurred and any additional remediation activities would be to treat residual impacts rather than further releases.

None of the three possible remediation alternatives would generate waste material other than perhaps containers used to store and transport chemical oxidants or any chemicals used for EMNA. In either case, all equipment and residual chemicals would be handled and disposed of using applicable approved methods.

Cost and ease of implementation are also considerations when evaluating remedial alternatives. All of the three alternatives would have similar monitoring, reporting, and permitting costs. However, chemical oxidation would additionally require substantial costs related to purchase and transport of chemicals, infrastructure (i.e. injection wells and/or related equipment), and trained manpower. A pilot study would also be required to evaluate the actual feasibility of a chemical oxidation program prior to full-scale implementation.

Chemical oxidation is not being recommended for use at the TP 24-3 site due to uncertainty surrounding the effectiveness and ease of implementation of such a program, the high cost, human health and safety risks, and the potential to increase the mobility of hydrocarbons in the aquifer. Instead, a MNA approach is recommended which could later be modified to an EMNA strategy if the need was suggested by monitoring data.

4.0 RECOMMENDED REMEDY

4.1 Monitored Natural Attenuation

EnCana proposes MNA as the recommended groundwater remediation alternative for TP 24-3 with EMNA as a contingency alternative. Based on the Wyoming DEQ's acceptance of this preferred remedy, EnCana will initiate specific tasks that support MNA as the selected site groundwater remedy. Examples of specific tasks include continuing collection of MNA – related chemical parameters to obtain groundwater conditions. The indicator parameters to be monitored include dissolved oxygen (DO), Oxygen-Reduction Potential (ORP), pH, alkalinity, nitrate, dissolved ferrous iron, manganese, sulfate, and methanogenesis. Results of this data will be used to determine the status of microbial degradation of hydrocarbons. In addition, obtaining groundwater elevation and geochemical data on a quarterly basis will allow a more thorough evaluation of patterns of contaminant concentrations and natural attenuation indicator parameters.

Following compilation and evaluation of the data, assessment findings will be reported at least semiannually to support the selection of this alternative. This data will also provide evidence for the primary mechanism for reducing contaminant concentrations and include an estimated timeframe for achieving the potential remediation objective. Further development of the TP 24-3 site conceptual model to support the MNA groundwater remediation alternative's effectiveness will also be a focus. A remedial action plan will be developed to describe controls associated with the remedy, a schedule, and other supporting information.

4.2 Recommended Monitoring and Analytical Methods Schedule 2010 - 2015

Table 6 provides a schedule for groundwater sampling events including the types of analysis for groundwater samples.

Table 6. Proposed Sampling Event Schedule and Suite of Analyses for TP-24-3.

Sampling Event	MNA *Geochemical Parameters	Volatile Organic Compounds (VOCs) by EPA Method 8260	Gasoline Range Organics (GRO) by EPA Method 8015	Diesel Range Organics (DRO) by EPA Method 8015
October 2010	X	X	X	X
January 2011	X	X	X	X
April 2011	X	X	X	X
August 2011	X	X	X	X
October 2011	X	X	X	X
January 2012	X	X	X	X
April 2012	X	X	X	X
August 2012	X	X	X	X
October 2012	X	X	X	X
January 2013	X	X	X	X
April 2013	X	X	X	X
August 2013	X	X	X	X
October 2013	X	X	X	X
January 2014	X	X	X	X
April 2014	X	X	X	X
August 2014	X	X	X	X
October 2014	X	X	X	X
January 2015	X	X	X	X
April 2015	X	X	X	X
August 2015	X	X	X	X
October 2015	X	X	X	X

*MNA geochemical parameters: alkalinity, total organic carbon, ammonia, Kjeldahl nitrogen, microbial electron acceptors (nitrate + nitrite and sulfate), total iron, total manganese, sulfide, and methane.

4.3 Recommended Points of Compliance

Based on the information gathered, EnCana will identify a subset of groundwater monitoring wells to identify points of compliance. At this time, we envision monitoring wells MW-1, MW-2, and MW-7 as candidate wells for monitoring the success of the MNA remedy.

5.0 SUMMARY

Site assessment activities conducted by EnCana beginning in 2006 have identified a hydrocarbon groundwater plume at the TP 24-3 natural gas well location resulting from the historic use of unlined pits which leaked hydrocarbon liquids into the subsurface environment. A targeted remediation project followed whereby approximately 1,000 cubic yards of contaminated soil was excavated from the area beneath the pit footprint.

Recent groundwater monitoring data show that a hydrocarbon plume persists down gradient of the excavated area. There is also evidence that residual hydrocarbons at the groundwater surface are seasonally re-mobilized and measured in samples collected from MW-7. No

deleterious impacts have been measured at sentinel well MW-8 and no human receptors have been identified down gradient of the known source area for up to one mile.

EnCana proposes MNA as the recommended groundwater remediation alternative to implement at TP 24-3 with EMNA as a contingency alternative. Based on the Wyoming DEQ's acceptance of this preferred remedy, EnCana will initiate specific tasks to collect data to evaluate the effectiveness of the remediation alternative. Following compilation and evaluation of the data, assessment findings will be reported at least semiannually to support the selection of this alternative.

6.0 REFERENCES

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Trihydro Corp. 2009. Memo to Mr. Mike Larson / EnCana Oil and Gas RE: Slug Test Results, EnCana Oil & Gas (USA), Inc. Pavillian VRP sites, Wind River Field, Wyoming. December 1, 2009.

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Wyoming Department of Environmental Quality Voluntary Remediation Program Fact Sheets # 12. #13, and #21.

Attachment 1.

April and June 2010 Laboratory Analytical Results

ENERGY LABORATORIES, INC. * 1120 S 27th St * PO Box 30916 * Billings, MT 59107-0916
Toll Free 800.735.4489 * 406.252.6325 * FAX 406.252.6069 * eli@energylab.com

ANALYTICAL SUMMARY REPORT

April 30, 2010

Mike Larson
Encana Oil and Gas USA Inc
462 S Federal
Riverton, WY 82501-4732

Workorder No.: B10041458

Project Name: Tribal Pavillion 24-3 (VRP)

Energy Laboratories Inc received the following 11 samples for Encana Oil and Gas USA Inc on 4/16/2010 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B10041458-001	TP 24-3 MW-1	04/14/10 13:00	04/16/10	Aqueous	DRO-Liquid-Liquid Extraction Diesel Range Organics, API Gasoline Range Organics 8260-Volatile Organic Compounds-Short
B10041458-002	TP 24-3 MW-2	04/14/10 14:00	04/16/10	Aqueous	Same As Above
B10041458-003	TP 24-3 MW-3	04/14/10 13:20	04/16/10	Aqueous	Same As Above
B10041458-004	TP 24-3 MW-4	04/14/10 14:30	04/16/10	Aqueous	Same As Above
B10041458-005	TP 24-3 MW-5	04/14/10 12:30	04/16/10	Aqueous	Same As Above
B10041458-006	TP 24-3 MW-6	04/14/10 12:00	04/16/10	Aqueous	Same As Above
B10041458-007	TP 24-3 MW-7	04/14/10 15:00	04/16/10	Aqueous	Same As Above
B10041458-008	TP 24-3 MW-8A	04/14/10 15:45	04/16/10	Aqueous	Same As Above
B10041458-009	TP 24-3 MW-8B	04/14/10 15:50	04/16/10	Aqueous	Same As Above
B10041458-010	Trip Blank 1 Lot# 032910, B-TS, SHP0246	04/14/10 12:00	04/16/10	Trip Blank	8260-Volatile Organic Compounds-Short
B10041458-011	Trip Blank 2 Lot# 033010, B-TS, SHP0246	04/14/10 14:00	04/16/10	Trip Blank	Same As Above

Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

ENERGY LABORATORIES, INC. * 1120 S 27th St * PO Box 30916 * Billings, MT 59107-0916
Toll Free 800.735.4489 * 406.252.6325 * FAX 406.252.6069 * eli@energylab.com

LABORATORY ANALYTICAL REPORT

Client: Encana Oil and Gas USA Inc
Project: Tribal Pavillion 24-3 (VRP)
Lab ID: B10041458-001
Client Sample ID: TP 24-3 MW-1

Report Date: 04/30/10
Collection Date: 04/14/10 13:00
DateReceived: 04/16/10
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Benzene	64	ug/L	E	1.0		SW8260B	04/23/10 19:39 / jrj
Bromobenzene	ND	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj
Bromochloromethane	ND	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj
Bromodichloromethane	ND	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj
Bromoform	ND	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj
Bromomethane	ND	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj
Chlorobenzene	ND	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj
Chloroethane	ND	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj
2-Chloroethyl vinyl ether	ND	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj
Chloroform	ND	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj
Chloromethane	ND	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj
2-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj
4-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj
Dibromomethane	ND	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj
1,3-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj
1,3-Dichloropropane	ND	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj
2,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj
1,1-Dichloropropene	ND	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj
Ethylbenzene	5.7	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj
Methyl ethyl ketone	ND	ug/L		20		SW8260B	04/23/10 19:39 / jrj
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj
Methylene chloride	ND	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj
Styrene	ND	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj
Tetrachloroethene	ND	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj
Toluene	0.17	ug/L	J	1.0		SW8260B	04/23/10 19:39 / jrj
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
E - Estimated value. Result exceeds the instrument upper quantitation limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
J - Estimated value. The analyte was present but less than the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Encana Oil and Gas USA Inc
Project: Tribal Pavillion 24-3 (VRP)
Lab ID: B10041458-001
Client Sample ID: TP 24-3 MW-1

Report Date: 04/30/10
Collection Date: 04/14/10 13:00
DateReceived: 04/16/10
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Trichloroethene	ND	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj
Vinyl chloride	ND	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj
m+p-Xylenes	38	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj
o-Xylene	0.15	ug/L	J	1.0		SW8260B	04/23/10 19:39 / jrj
Xylenes, Total	38	ug/L		1.0		SW8260B	04/23/10 19:39 / jrj
Surr: Dibromofluoromethane	94.0	%REC		77-126		SW8260B	04/23/10 19:39 / jrj
Surr: 1,2-Dichloroethane-d4	91.0	%REC		70-130		SW8260B	04/23/10 19:39 / jrj
Surr: Toluene-d8	98.0	%REC		79-122		SW8260B	04/23/10 19:39 / jrj
Surr: p-Bromofluorobenzene	101	%REC		76-127		SW8260B	04/23/10 19:39 / jrj
- E = Estimated value. The value was over the upper calibration range of the instrument but not above its linear range. The value was extrapolated from the calibration curve. Due to laboratory error, there was no additional sample available for dilution.							
PETROLEUM HYDROCARBONS-VOLATILE							
Gasoline Range Organics (GRO)	3230	ug/L		200		SW8015M as	04/21/10 00:20 / bw
GRO as Gasoline	3230	ug/L		200		SW8015M as	04/21/10 00:20 / bw
Total Purgeable Hydrocarbons	4940	ug/L		200		SW8015M as	04/21/10 00:20 / bw
Surr: Trifluorotoluene	107	%REC		50-150		SW8015M as	04/21/10 00:20 / bw
- Note 1: Gasoline Range Organics(GRO) are defined as all hydrocarbons eluting between 2-Methylpentane and 1,2,4-Trimethylbenzene.							
- Note 2: GRO as Gasoline is defined by the analyst as the portion of the GRO range that resembles gasoline.							
- Note 3: Total Purgeable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.							
- The sample was received in the laboratory with a pH > 2. The pH was 6.							
PETROLEUM HYDROCARBONS-SEMI-VOLATILE							
Diesel Range Organics (DRO)	3.2	mg/L		0.30		SW8015M as	04/21/10 14:20 / mdw
Diesel Range Organics as Diesel	ND	mg/L		0.30		SW8015M as	04/21/10 14:20 / mdw
Total Extractable Hydrocarbons	4.7	mg/L		0.30		SW8015M as	04/21/10 14:20 / mdw
Surr: o-Terphenyl	51.0	%REC		50-150		SW8015M as	04/21/10 14:20 / mdw
- Note 1: Diesel Range Organics are defined as all hydrocarbons eluting between C10 and C28.							
- Note 2: Diesel Range Organics as Diesel are defined by the analyst as the portion of the chromatogram between C10 and C28 that resembles diesel fuel.							
- Note 3: Total Extractable Hydrocarbons are defined as the total hydrocarbon response regardless of elution time.							

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Encana Oil and Gas USA Inc
Project: Tribal Pavillion 24-3 (VRP)
Lab ID: B10041458-002
Client Sample ID: TP 24-3 MW-2

Report Date: 04/30/10
Collection Date: 04/14/10 14:00
DateReceived: 04/16/10
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Benzene	17	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj
Bromobenzene	ND	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj
Bromochloromethane	ND	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj
Bromodichloromethane	ND	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj
Bromoform	ND	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj
Bromomethane	ND	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj
Chlorobenzene	ND	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj
Chloroethane	ND	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj
2-Chloroethyl vinyl ether	ND	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj
Chloroform	ND	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj
Chloromethane	ND	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj
2-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj
4-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj
Dibromomethane	ND	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj
1,3-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj
1,3-Dichloropropane	ND	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj
2,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj
1,1-Dichloropropene	ND	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj
Ethylbenzene	31	ug/L		10		SW8260B	04/28/10 14:18 / jrj
Methyl ethyl ketone	ND	ug/L		20		SW8260B	04/23/10 19:03 / jrj
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj
Methylene chloride	ND	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj
Styrene	ND	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj
Tetrachloroethene	ND	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj
Toluene	ND	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Encana Oil and Gas USA Inc
Project: Tribal Pavillion 24-3 (VRP)
Lab ID: B10041458-002
Client Sample ID: TP 24-3 MW-2

Report Date: 04/30/10
Collection Date: 04/14/10 14:00
DateReceived: 04/16/10
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Trichloroethene	ND	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj
Vinyl chloride	ND	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj
m+p-Xylenes	86	ug/L		10		SW8260B	04/28/10 14:18 / jrj
o-Xylene	7.9	ug/L		1.0		SW8260B	04/23/10 19:03 / jrj
Xylenes, Total	94	ug/L		10		SW8260B	04/28/10 14:18 / jrj
Surr: Dibromofluoromethane	99.0	%REC		77-126		SW8260B	04/23/10 19:03 / jrj
Surr: 1,2-Dichloroethane-d4	98.0	%REC		70-130		SW8260B	04/23/10 19:03 / jrj
Surr: Toluene-d8	104	%REC		79-122		SW8260B	04/23/10 19:03 / jrj
Surr: p-Bromofluorobenzene	108	%REC		76-127		SW8260B	04/23/10 19:03 / jrj
PETROLEUM HYDROCARBONS-VOLATILE							
Gasoline Range Organics (GRO)	11600	ug/L		400		SW8015M as	04/21/10 02:01 / bw
GRO as Gasoline	11600	ug/L		400		SW8015M as	04/21/10 02:01 / bw
Total Purgeable Hydrocarbons	18600	ug/L		400		SW8015M as	04/21/10 02:01 / bw
Surr: Trifluorotoluene	92.0	%REC		50-150		SW8015M as	04/21/10 02:01 / bw

- Note 1: Gasoline Range Organics(GRO) are defined as all hydrocarbons eluting between 2-Methylpentane and 1,2,4-Trimethylbenzene.
- Note 2: GRO as Gasoline is defined by the analyst as the portion of the GRO range that resembles gasoline.
- Note 3: Total Purgeable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.
- The sample was received in the laboratory with a pH > 2. The pH was 6.

PETROLEUM HYDROCARBONS-SEMI-VOLATILE							
Diesel Range Organics (DRO)	59	mg/L		15		SW8015M as	04/20/10 20:23 / jdb
Diesel Range Organics as Diesel	50	mg/L		15		SW8015M as	04/20/10 20:23 / jdb
Total Extractable Hydrocarbons	80	mg/L		15		SW8015M as	04/20/10 20:23 / jdb
Surr: o-Terphenyl	0	%REC	O	50-150		SW8015M as	04/20/10 20:23 / jdb

- Note 1: Diesel Range Organics are defined as all hydrocarbons eluting between C10 and C28.
- Note 2: Diesel Range Organics as Diesel are defined by the analyst as the portion of the chromatogram between C10 and C28 that resembles diesel fuel.
- Note 3: Total Extractable Hydrocarbons are defined as the total hydrocarbon response regardless of elution time.

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
O - Diluted out.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Encana Oil and Gas USA Inc
Project: Tribal Pavillion 24-3 (VRP)
Lab ID: B10041458-003
Client Sample ID: TP 24-3 MW-3

Report Date: 04/30/10
Collection Date: 04/14/10 13:20
DateReceived: 04/16/10
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Benzene	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
Bromobenzene	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
Bromochloromethane	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
Bromodichloromethane	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
Bromoform	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
Bromomethane	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
Chlorobenzene	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
Chloroethane	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
2-Chloroethyl vinyl ether	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
Chloroform	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
Chloromethane	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
2-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
4-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
Dibromomethane	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
1,3-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
1,3-Dichloropropane	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
2,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
1,1-Dichloropropene	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
Methyl ethyl ketone	ND	ug/L		20		SW8260B	04/22/10 20:24 / jrj
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
Methylene chloride	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
Styrene	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
Tetrachloroethene	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
Toluene	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Encana Oil and Gas USA Inc
Project: Tribal Pavillion 24-3 (VRP)
Lab ID: B10041458-003
Client Sample ID: TP 24-3 MW-3

Report Date: 04/30/10
Collection Date: 04/14/10 13:20
DateReceived: 04/16/10
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Trichloroethene	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
Vinyl chloride	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	04/22/10 20:24 / jrj
Surr: Dibromofluoromethane	93.0	%REC		77-126		SW8260B	04/22/10 20:24 / jrj
Surr: 1,2-Dichloroethane-d4	90.0	%REC		70-130		SW8260B	04/22/10 20:24 / jrj
Surr: Toluene-d8	102	%REC		79-122		SW8260B	04/22/10 20:24 / jrj
Surr: p-Bromofluorobenzene	103	%REC		76-127		SW8260B	04/22/10 20:24 / jrj
PETROLEUM HYDROCARBONS-VOLATILE							
Gasoline Range Organics (GRO)	ND	ug/L		20		SW8015M as	04/20/10 14:12 / bw
GRO as Gasoline	ND	ug/L		20		SW8015M as	04/20/10 14:12 / bw
Total Purgeable Hydrocarbons	ND	ug/L		20		SW8015M as	04/20/10 14:12 / bw
Surr: Trifluorotoluene	89.0	%REC		50-150		SW8015M as	04/20/10 14:12 / bw
PETROLEUM HYDROCARBONS-SEMI-VOLATILE							
Diesel Range Organics (DRO)	ND	mg/L		0.30		SW8015M as	04/21/10 16:09 / mdw
Diesel Range Organics as Diesel	ND	mg/L		0.30		SW8015M as	04/21/10 16:09 / mdw
Total Extractable Hydrocarbons	ND	mg/L		0.30		SW8015M as	04/21/10 16:09 / mdw
Surr: o-Terphenyl	78.0	%REC		50-150		SW8015M as	04/21/10 16:09 / mdw

- Note 1: Gasoline Range Organics(GRO) are defined as all hydrocarbons eluting between 2-Methylpentane and 1,2,4-Trimethylbenzene.
- Note 2: GRO as Gasoline is defined by the analyst as the portion of the GRO range that resembles gasoline.
- Note 3: Total Purgeable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.

- Note 1: Diesel Range Organics are defined as all hydrocarbons eluting between C10 and C28.
- Note 2: Diesel Range Organics as Diesel are defined by the analyst as the portion of the chromatogram between C10 and C28 that resembles diesel fuel.
- Note 3: Total Extractable Hydrocarbons are defined as the total hydrocarbon response regardless of elution time.

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Encana Oil and Gas USA Inc
Project: Tribal Pavillion 24-3 (VRP)
Lab ID: B10041458-004
Client Sample ID: TP 24-3 MW-4

Report Date: 04/30/10
Collection Date: 04/14/10 14:30
DateReceived: 04/16/10
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Benzene	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
Bromobenzene	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
Bromochloromethane	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
Bromodichloromethane	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
Bromoform	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
Bromomethane	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
Chlorobenzene	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
Chloroethane	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
2-Chloroethyl vinyl ether	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
Chloroform	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
Chloromethane	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
2-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
4-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
Dibromomethane	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
1,3-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
1,3-Dichloropropane	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
2,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
1,1-Dichloropropene	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
Methyl ethyl ketone	ND	ug/L		20		SW8260B	04/23/10 15:19 / jrj
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
Methylene chloride	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
Styrene	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
Tetrachloroethene	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
Toluene	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj

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LABORATORY ANALYTICAL REPORT

Client: Encana Oil and Gas USA Inc
Project: Tribal Pavillion 24-3 (VRP)
Lab ID: B10041458-004
Client Sample ID: TP 24-3 MW-4

Report Date: 04/30/10
Collection Date: 04/14/10 14:30
DateReceived: 04/16/10
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Trichloroethene	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
Vinyl chloride	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	04/23/10 15:19 / jrj
Surr: Dibromofluoromethane	90.0	%REC		77-126		SW8260B	04/23/10 15:19 / jrj
Surr: 1,2-Dichloroethane-d4	86.0	%REC		70-130		SW8260B	04/23/10 15:19 / jrj
Surr: Toluene-d8	106	%REC		79-122		SW8260B	04/23/10 15:19 / jrj
Surr: p-Bromofluorobenzene	102	%REC		76-127		SW8260B	04/23/10 15:19 / jrj
PETROLEUM HYDROCARBONS-VOLATILE							
Gasoline Range Organics (GRO)	ND	ug/L		20		SW8015M as	04/20/10 14:46 / bw
GRO as Gasoline	ND	ug/L		20		SW8015M as	04/20/10 14:46 / bw
Total Purgeable Hydrocarbons	ND	ug/L		20		SW8015M as	04/20/10 14:46 / bw
Surr: Trifluorotoluene	93.0	%REC		50-150		SW8015M as	04/20/10 14:46 / bw
PETROLEUM HYDROCARBONS-SEMI-VOLATILE							
Diesel Range Organics (DRO)	ND	mg/L		0.30		SW8015M as	04/21/10 18:16 / mdw
Diesel Range Organics as Diesel	ND	mg/L		0.30		SW8015M as	04/21/10 18:16 / mdw
Total Extractable Hydrocarbons	0.61	mg/L		0.30		SW8015M as	04/21/10 18:16 / mdw
Surr: o-Terphenyl	107	%REC		50-150		SW8015M as	04/21/10 18:16 / mdw

- Note 1: Gasoline Range Organics(GRO) are defined as all hydrocarbons eluting between 2-Methylpentane and 1,2,4-Trimethylbenzene.
- Note 2: GRO as Gasoline is defined by the analyst as the portion of the GRO range that resembles gasoline.
- Note 3: Total Purgeable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.

- Note 1: Diesel Range Organics are defined as all hydrocarbons eluting between C10 and C28.
- Note 2: Diesel Range Organics as Diesel are defined by the analyst as the portion of the chromatogram between C10 and C28 that resembles diesel fuel.
- Note 3: Total Extractable Hydrocarbons are defined as the total hydrocarbon response regardless of elution time.

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Encana Oil and Gas USA Inc
Project: Tribal Pavillion 24-3 (VRP)
Lab ID: B10041458-005
Client Sample ID: TP 24-3 MW-5

Report Date: 04/30/10
Collection Date: 04/14/10 12:30
DateReceived: 04/16/10
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Benzene	15	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj
Bromobenzene	ND	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj
Bromochloromethane	ND	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj
Bromodichloromethane	ND	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj
Bromoform	ND	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj
Bromomethane	ND	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj
Chlorobenzene	ND	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj
Chloroethane	ND	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj
2-Chloroethyl vinyl ether	ND	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj
Chloroform	ND	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj
Chloromethane	ND	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj
2-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj
4-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj
Dibromomethane	ND	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj
1,3-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj
1,3-Dichloropropane	ND	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj
2,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj
1,1-Dichloropropene	ND	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj
Ethylbenzene	16	ug/L		10		SW8260B	04/27/10 22:26 / jrj
Methyl ethyl ketone	ND	ug/L		20		SW8260B	04/23/10 17:12 / jrj
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj
Methylene chloride	ND	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj
Styrene	ND	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj
Tetrachloroethene	ND	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj
Toluene	ND	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Encana Oil and Gas USA Inc
Project: Tribal Pavillion 24-3 (VRP)
Lab ID: B10041458-005
Client Sample ID: TP 24-3 MW-5

Report Date: 04/30/10
Collection Date: 04/14/10 12:30
DateReceived: 04/16/10
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Trichloroethene	ND	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj
Vinyl chloride	ND	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj
m+p-Xylenes	62	ug/L		10		SW8260B	04/27/10 22:26 / jrj
o-Xylene	2.6	ug/L		1.0		SW8260B	04/23/10 17:12 / jrj
Xylenes, Total	65	ug/L		10		SW8260B	04/27/10 22:26 / jrj
Surr: Dibromofluoromethane	91.0	%REC		77-126		SW8260B	04/23/10 17:12 / jrj
Surr: 1,2-Dichloroethane-d4	82.0	%REC		70-130		SW8260B	04/23/10 17:12 / jrj
Surr: Toluene-d8	106	%REC		79-122		SW8260B	04/23/10 17:12 / jrj
Surr: p-Bromofluorobenzene	99.0	%REC		76-127		SW8260B	04/23/10 17:12 / jrj
PETROLEUM HYDROCARBONS-VOLATILE							
Gasoline Range Organics (GRO)	1700	ug/L		100		SW8015M as	04/21/10 03:41 / bw
GRO as Gasoline	1700	ug/L		100		SW8015M as	04/21/10 03:41 / bw
Total Purgeable Hydrocarbons	2520	ug/L		100		SW8015M as	04/21/10 03:41 / bw
Surr: Trifluorotoluene	107	%REC		50-150		SW8015M as	04/21/10 03:41 / bw

- Note 1: Gasoline Range Organics(GRO) are defined as all hydrocarbons eluting between 2-Methylpentane and 1,2,4-Trimethylbenzene.
- Note 2: GRO as Gasoline is defined by the analyst as the portion of the GRO range that resembles gasoline.
- Note 3: Total Purgeable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.
- The sample was received in the laboratory with a pH > 2. The pH was 6.

PETROLEUM HYDROCARBONS-SEMI-VOLATILE							
Diesel Range Organics (DRO)	2.6	mg/L		0.30		SW8015M as	04/21/10 19:11 / mdw
Diesel Range Organics as Diesel	ND	mg/L		0.30		SW8015M as	04/21/10 19:11 / mdw
Total Extractable Hydrocarbons	3.2	mg/L		0.30		SW8015M as	04/21/10 19:11 / mdw
Surr: o-Terphenyl	54.0	%REC		50-150		SW8015M as	04/21/10 19:11 / mdw

- Note 1: Diesel Range Organics are defined as all hydrocarbons eluting between C10 and C28.
- Note 2: Diesel Range Organics as Diesel are defined by the analyst as the portion of the chromatogram between C10 and C28 that resembles diesel fuel.
- Note 3: Total Extractable Hydrocarbons are defined as the total hydrocarbon response regardless of elution time.

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level.
QCL - Quality control limit. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Encana Oil and Gas USA Inc
Project: Tribal Pavillion 24-3 (VRP)
Lab ID: B10041458-006
Client Sample ID: TP 24-3 MW-6

Report Date: 04/30/10
Collection Date: 04/14/10 12:00
DateReceived: 04/16/10
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Benzene	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
Bromobenzene	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
Bromochloromethane	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
Bromodichloromethane	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
Bromoform	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
Bromomethane	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
Chlorobenzene	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
Chloroethane	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
2-Chloroethyl vinyl ether	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
Chloroform	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
Chloromethane	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
2-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
4-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
Dibromomethane	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
1,3-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
1,3-Dichloropropane	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
2,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
1,1-Dichloropropene	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
Methyl ethyl ketone	ND	ug/L		20		SW8260B	04/23/10 15:57 / jrj
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
Methylene chloride	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
Styrene	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
Tetrachloroethene	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
Toluene	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Encana Oil and Gas USA Inc
Project: Tribal Pavillion 24-3 (VRP)
Lab ID: B10041458-006
Client Sample ID: TP 24-3 MW-6

Report Date: 04/30/10
Collection Date: 04/14/10 12:00
DateReceived: 04/16/10
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Trichloroethene	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
Vinyl chloride	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	04/23/10 15:57 / jrj
Surr: Dibromofluoromethane	94.0	%REC		77-126		SW8260B	04/23/10 15:57 / jrj
Surr: 1,2-Dichloroethane-d4	90.0	%REC		70-130		SW8260B	04/23/10 15:57 / jrj
Surr: Toluene-d8	103	%REC		79-122		SW8260B	04/23/10 15:57 / jrj
Surr: p-Bromofluorobenzene	104	%REC		76-127		SW8260B	04/23/10 15:57 / jrj
PETROLEUM HYDROCARBONS-VOLATILE							
Gasoline Range Organics (GRO)	ND	ug/L		20		SW8015M as	04/20/10 15:19 / bw
GRO as Gasoline	ND	ug/L		20		SW8015M as	04/20/10 15:19 / bw
Total Purgeable Hydrocarbons	ND	ug/L		20		SW8015M as	04/20/10 15:19 / bw
Surr: Trifluorotoluene	90.0	%REC		50-150		SW8015M as	04/20/10 15:19 / bw
PETROLEUM HYDROCARBONS-SEMI-VOLATILE							
Diesel Range Organics (DRO)	ND	mg/L		0.30		SW8015M as	04/21/10 20:05 / mdw
Diesel Range Organics as Diesel	ND	mg/L		0.30		SW8015M as	04/21/10 20:05 / mdw
Total Extractable Hydrocarbons	0.46	mg/L		0.30		SW8015M as	04/21/10 20:05 / mdw
Surr: o-Terphenyl	76.0	%REC		50-150		SW8015M as	04/21/10 20:05 / mdw

- Note 1: Gasoline Range Organics(GRO) are defined as all hydrocarbons eluting between 2-Methylpentane and 1,2,4-Trimethylbenzene.
- Note 2: GRO as Gasoline is defined by the analyst as the portion of the GRO range that resembles gasoline.
- Note 3: Total Purgeable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.

- Note 1: Diesel Range Organics are defined as all hydrocarbons eluting between C10 and C28.
- Note 2: Diesel Range Organics as Diesel are defined by the analyst as the portion of the chromatogram between C10 and C28 that resembles diesel fuel.
- Note 3: Total Extractable Hydrocarbons are defined as the total hydrocarbon response regardless of elution time.

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Encana Oil and Gas USA Inc
Project: Tribal Pavillion 24-3 (VRP)
Lab ID: B10041458-007
Client Sample ID: TP 24-3 MW-7

Report Date: 04/30/10
Collection Date: 04/14/10 15:00
DateReceived: 04/16/10
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Benzene	1090	ug/L		100		SW8260B	04/28/10 14:57 / jrj
Bromobenzene	ND	ug/L		1.0		SW8260B	04/23/10 17:48 / jrj
Bromochloromethane	ND	ug/L		1.0		SW8260B	04/23/10 17:48 / jrj
Bromodichloromethane	ND	ug/L		1.0		SW8260B	04/23/10 17:48 / jrj
Bromoform	ND	ug/L		1.0		SW8260B	04/23/10 17:48 / jrj
Bromomethane	ND	ug/L		1.0		SW8260B	04/23/10 17:48 / jrj
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	04/23/10 17:48 / jrj
Chlorobenzene	ND	ug/L		1.0		SW8260B	04/23/10 17:48 / jrj
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	04/23/10 17:48 / jrj
Chloroethane	ND	ug/L		1.0		SW8260B	04/23/10 17:48 / jrj
2-Chloroethyl vinyl ether	ND	ug/L		1.0		SW8260B	04/23/10 17:48 / jrj
Chloroform	ND	ug/L		1.0		SW8260B	04/23/10 17:48 / jrj
Chloromethane	ND	ug/L		1.0		SW8260B	04/23/10 17:48 / jrj
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	04/23/10 17:48 / jrj
2-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/23/10 17:48 / jrj
4-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/23/10 17:48 / jrj
Dibromomethane	ND	ug/L		1.0		SW8260B	04/23/10 17:48 / jrj
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/23/10 17:48 / jrj
1,3-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/23/10 17:48 / jrj
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/23/10 17:48 / jrj
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	04/23/10 17:48 / jrj
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	04/23/10 17:48 / jrj
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	04/23/10 17:48 / jrj
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	04/23/10 17:48 / jrj
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/23/10 17:48 / jrj
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/23/10 17:48 / jrj
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/23/10 17:48 / jrj
1,3-Dichloropropane	ND	ug/L		1.0		SW8260B	04/23/10 17:48 / jrj
2,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/23/10 17:48 / jrj
1,1-Dichloropropene	ND	ug/L		1.0		SW8260B	04/23/10 17:48 / jrj
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/23/10 17:48 / jrj
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/23/10 17:48 / jrj
Ethylbenzene	510	ug/L		50		SW8260B	04/28/10 16:13 / jrj
Methyl ethyl ketone	ND	ug/L		20		SW8260B	04/23/10 17:48 / jrj
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8260B	04/23/10 17:48 / jrj
Methylene chloride	ND	ug/L		1.0		SW8260B	04/23/10 17:48 / jrj
Styrene	ND	ug/L		1.0		SW8260B	04/23/10 17:48 / jrj
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/23/10 17:48 / jrj
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/23/10 17:48 / jrj
Tetrachloroethene	ND	ug/L		1.0		SW8260B	04/23/10 17:48 / jrj
Toluene	ND	ug/L		1.0		SW8260B	04/23/10 17:48 / jrj
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	04/23/10 17:48 / jrj
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	04/23/10 17:48 / jrj

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Encana Oil and Gas USA Inc
Project: Tribal Pavillion 24-3 (VRP)
Lab ID: B10041458-007
Client Sample ID: TP 24-3 MW-7

Report Date: 04/30/10
Collection Date: 04/14/10 15:00
DateReceived: 04/16/10
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Trichloroethene	ND	ug/L		1.0		SW8260B	04/23/10 17:48 / jrj
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	04/23/10 17:48 / jrj
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	04/23/10 17:48 / jrj
Vinyl chloride	ND	ug/L		1.0		SW8260B	04/23/10 17:48 / jrj
m+p-Xylenes	1040	ug/L		50		SW8260B	04/28/10 16:13 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	04/23/10 17:48 / jrj
Xylenes, Total	1040	ug/L		50		SW8260B	04/28/10 16:13 / jrj
Surr: Dibromofluoromethane	93.0	%REC		77-126		SW8260B	04/23/10 17:48 / jrj
Surr: 1,2-Dichloroethane-d4	90.0	%REC		70-130		SW8260B	04/23/10 17:48 / jrj
Surr: Toluene-d8	112	%REC		79-122		SW8260B	04/23/10 17:48 / jrj
Surr: p-Bromofluorobenzene	94.0	%REC		76-127		SW8260B	04/23/10 17:48 / jrj
PETROLEUM HYDROCARBONS-VOLATILE							
Gasoline Range Organics (GRO)	4920	ug/L		100		SW8015M as	04/21/10 11:57 / bw
GRO as Gasoline	4920	ug/L		100		SW8015M as	04/21/10 11:57 / bw
Total Purgeable Hydrocarbons	6980	ug/L		100		SW8015M as	04/21/10 11:57 / bw
Surr: Trifluorotoluene	105	%REC		50-150		SW8015M as	04/21/10 11:57 / bw

- Note 1: Gasoline Range Organics(GRO) are defined as all hydrocarbons eluting between 2-Methylpentane and 1,2,4-Trimethylbenzene.
- Note 2: GRO as Gasoline is defined by the analyst as the portion of the GRO range that resembles gasoline.
- Note 3: Total Purgeable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.
- The sample was received in the laboratory with a pH > 2. The pH was 6.

PETROLEUM HYDROCARBONS-SEMI-VOLATILE							
Diesel Range Organics (DRO)	17	mg/L		0.30		SW8015M as	04/21/10 22:49 / mdw
Diesel Range Organics as Diesel	ND	mg/L		0.30		SW8015M as	04/21/10 22:49 / mdw
Total Extractable Hydrocarbons	20	mg/L		0.30		SW8015M as	04/21/10 22:49 / mdw
Surr: o-Terphenyl	49.0	%REC	S	50-150		SW8015M as	04/21/10 22:49 / mdw

- Note 1: Diesel Range Organics are defined as all hydrocarbons eluting between C10 and C28.
- Note 2: Diesel Range Organics as Diesel are defined by the analyst as the portion of the chromatogram between C10 and C28 that resembles diesel fuel.
- Note 3: Total Extractable Hydrocarbons are defined as the total hydrocarbon response regardless of elution time.
- S=Surrogate recovery outside QC advisory limits. The sample contained a layer of sediment that may have strongly adsorbed the surrogate and/or reduced extraction efficiency.

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
S - Spike recovery outside of advisory limits.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Encana Oil and Gas USA Inc
Project: Tribal Pavillion 24-3 (VRP)
Lab ID: B10041458-008
Client Sample ID: TP 24-3 MW-8A

Report Date: 04/30/10
Collection Date: 04/14/10 15:45
DateReceived: 04/16/10
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Benzene	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
Bromobenzene	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
Bromochloromethane	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
Bromodichloromethane	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
Bromoform	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
Bromomethane	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
Chlorobenzene	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
Chloroethane	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
2-Chloroethyl vinyl ether	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
Chloroform	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
Chloromethane	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
2-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
4-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
Dibromomethane	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
1,3-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
1,3-Dichloropropane	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
2,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
1,1-Dichloropropene	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
Methyl ethyl ketone	ND	ug/L		20		SW8260B	04/27/10 21:45 / jrj
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
Methylene chloride	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
Styrene	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
Tetrachloroethene	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
Toluene	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Encana Oil and Gas USA Inc
Project: Tribal Pavillion 24-3 (VRP)
Lab ID: B10041458-008
Client Sample ID: TP 24-3 MW-8A

Report Date: 04/30/10
Collection Date: 04/14/10 15:45
DateReceived: 04/16/10
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Trichloroethene	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
Vinyl chloride	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	04/27/10 21:45 / jrj
Surr: Dibromofluoromethane	92.0	%REC		77-126		SW8260B	04/27/10 21:45 / jrj
Surr: 1,2-Dichloroethane-d4	90.0	%REC		70-130		SW8260B	04/27/10 21:45 / jrj
Surr: Toluene-d8	101	%REC		79-122		SW8260B	04/27/10 21:45 / jrj
Surr: p-Bromofluorobenzene	99.0	%REC		76-127		SW8260B	04/27/10 21:45 / jrj
PETROLEUM HYDROCARBONS-VOLATILE							
Gasoline Range Organics (GRO)	ND	ug/L		20		SW8015M as	04/20/10 15:52 / bw
GRO as Gasoline	ND	ug/L		20		SW8015M as	04/20/10 15:52 / bw
Total Purgeable Hydrocarbons	ND	ug/L		20		SW8015M as	04/20/10 15:52 / bw
Surr: Trifluorotoluene	93.0	%REC		50-150		SW8015M as	04/20/10 15:52 / bw
PETROLEUM HYDROCARBONS-SEMI-VOLATILE							
Diesel Range Organics (DRO)	ND	mg/L		0.30		SW8015M as	04/28/10 17:42 / jdb
Diesel Range Organics as Diesel	ND	mg/L		0.30		SW8015M as	04/28/10 17:42 / jdb
Total Extractable Hydrocarbons	0.47	mg/L		0.30		SW8015M as	04/28/10 17:42 / jdb
Surr: o-Terphenyl	70.0	%REC		50-150		SW8015M as	04/28/10 17:42 / jdb

- Note 1: Gasoline Range Organics(GRO) are defined as all hydrocarbons eluting between 2-Methylpentane and 1,2,4-Trimethylbenzene.
- Note 2: GRO as Gasoline is defined by the analyst as the portion of the GRO range that resembles gasoline.
- Note 3: Total Purgeable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.

- Note 1: Diesel Range Organics are defined as all hydrocarbons eluting between C10 and C28.
- Note 2: Diesel Range Organics as Diesel are defined by the analyst as the portion of the chromatogram between C10 and C28 that resembles diesel fuel.
- Note 3: Total Extractable Hydrocarbons are defined as the total hydrocarbon response regardless of elution time.

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Encana Oil and Gas USA Inc
Project: Tribal Pavillion 24-3 (VRP)
Lab ID: B10041458-009
Client Sample ID: TP 24-3 MW-8B

Report Date: 04/30/10
Collection Date: 04/14/10 15:50
DateReceived: 04/16/10
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Benzene	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
Bromobenzene	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
Bromochloromethane	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
Bromodichloromethane	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
Bromoform	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
Bromomethane	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
Chlorobenzene	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
Chloroethane	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
2-Chloroethyl vinyl ether	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
Chloroform	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
Chloromethane	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
2-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
4-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
Dibromomethane	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
1,3-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
1,3-Dichloropropane	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
2,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
1,1-Dichloropropene	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
Methyl ethyl ketone	ND	ug/L		20		SW8260B	04/23/10 16:35 / jrj
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
Methylene chloride	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
Styrene	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
Tetrachloroethene	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
Toluene	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Encana Oil and Gas USA Inc
Project: Tribal Pavillion 24-3 (VRP)
Lab ID: B10041458-009
Client Sample ID: TP 24-3 MW-8B

Report Date: 04/30/10
Collection Date: 04/14/10 15:50
DateReceived: 04/16/10
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Trichloroethene	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
Vinyl chloride	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	04/23/10 16:35 / jrj
Surr: Dibromofluoromethane	91.0	%REC		77-126		SW8260B	04/23/10 16:35 / jrj
Surr: 1,2-Dichloroethane-d4	85.0	%REC		70-130		SW8260B	04/23/10 16:35 / jrj
Surr: Toluene-d8	100	%REC		79-122		SW8260B	04/23/10 16:35 / jrj
Surr: p-Bromofluorobenzene	106	%REC		76-127		SW8260B	04/23/10 16:35 / jrj
PETROLEUM HYDROCARBONS-VOLATILE							
Gasoline Range Organics (GRO)	ND	ug/L		20		SW8015M as	04/20/10 16:26 / bw
GRO as Gasoline	ND	ug/L		20		SW8015M as	04/20/10 16:26 / bw
Total Purgeable Hydrocarbons	ND	ug/L		20		SW8015M as	04/20/10 16:26 / bw
Surr: Trifluorotoluene	92.0	%REC		50-150		SW8015M as	04/20/10 16:26 / bw
PETROLEUM HYDROCARBONS-SEMI-VOLATILE							
Diesel Range Organics (DRO)	ND	mg/L		0.30		SW8015M as	04/28/10 19:32 / jdb
Diesel Range Organics as Diesel	ND	mg/L		0.30		SW8015M as	04/28/10 19:32 / jdb
Total Extractable Hydrocarbons	0.50	mg/L		0.30		SW8015M as	04/28/10 19:32 / jdb
Surr: o-Terphenyl	69.0	%REC		50-150		SW8015M as	04/28/10 19:32 / jdb

- Note 1: Gasoline Range Organics(GRO) are defined as all hydrocarbons eluting between 2-Methylpentane and 1,2,4-Trimethylbenzene.
- Note 2: GRO as Gasoline is defined by the analyst as the portion of the GRO range that resembles gasoline.
- Note 3: Total Purgeable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.

- Note 1: Diesel Range Organics are defined as all hydrocarbons eluting between C10 and C28.
- Note 2: Diesel Range Organics as Diesel are defined by the analyst as the portion of the chromatogram between C10 and C28 that resembles diesel fuel.
- Note 3: Total Extractable Hydrocarbons are defined as the total hydrocarbon response regardless of elution time.

Report Definitions:
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LABORATORY ANALYTICAL REPORT

Client: Encana Oil and Gas USA Inc
Project: Tribal Pavillion 24-3 (VRP)
Lab ID: B10041458-010
Client Sample ID: Trip Blank 1 Lot# 032910, B-TS, SHP0246

Report Date: 04/30/10
Collection Date: 04/14/10 12:00
DateReceived: 04/16/10
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Benzene	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
Bromobenzene	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
Bromochloromethane	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
Bromodichloromethane	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
Bromoform	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
Bromomethane	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
Chlorobenzene	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
Chloroethane	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
2-Chloroethyl vinyl ether	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
Chloroform	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
Chloromethane	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
2-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
4-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
Dibromomethane	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
1,3-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
1,3-Dichloropropane	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
2,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
1,1-Dichloropropene	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
Methyl ethyl ketone	ND	ug/L		20		SW8260B	04/22/10 19:43 / jrj
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
Methylene chloride	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
Styrene	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
Tetrachloroethene	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
Toluene	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Encana Oil and Gas USA Inc
Project: Tribal Pavillion 24-3 (VRP)
Lab ID: B10041458-010
Client Sample ID: Trip Blank 1 Lot# 032910, B-TS, SHP0246

Report Date: 04/30/10
Collection Date: 04/14/10 12:00
DateReceived: 04/16/10
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Trichloroethene	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
Vinyl chloride	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	04/22/10 19:43 / jrj
Surr: Dibromofluoromethane	96.0	%REC		77-126		SW8260B	04/22/10 19:43 / jrj
Surr: 1,2-Dichloroethane-d4	92.0	%REC		70-130		SW8260B	04/22/10 19:43 / jrj
Surr: Toluene-d8	106	%REC		79-122		SW8260B	04/22/10 19:43 / jrj
Surr: p-Bromofluorobenzene	104	%REC		76-127		SW8260B	04/22/10 19:43 / jrj

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Encana Oil and Gas USA Inc
Project: Tribal Pavillion 24-3 (VRP)
Lab ID: B10041458-011
Client Sample ID: Trip Blank 2 Lot# 033010, B-TS, SHP0246

Report Date: 04/30/10
Collection Date: 04/14/10 14:00
DateReceived: 04/16/10
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Benzene	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
Bromobenzene	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
Bromochloromethane	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
Bromodichloromethane	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
Bromoform	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
Bromomethane	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
Chlorobenzene	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
Chloroethane	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
2-Chloroethyl vinyl ether	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
Chloroform	0.26	ug/L	J	1.0		SW8260B	04/22/10 19:02 / jrj
Chloromethane	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
2-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
4-Chlorotoluene	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
Dibromomethane	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
1,3-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
1,3-Dichloropropane	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
2,2-Dichloropropane	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
1,1-Dichloropropene	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
Ethylbenzene	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
Methyl ethyl ketone	ND	ug/L		20		SW8260B	04/22/10 19:02 / jrj
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
Methylene chloride	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
Styrene	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
Tetrachloroethene	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
Toluene	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Encana Oil and Gas USA Inc
Project: Tribal Pavillion 24-3 (VRP)
Lab ID: B10041458-011
Client Sample ID: Trip Blank 2 Lot# 033010, B-TS, SHP0246

Report Date: 04/30/10
Collection Date: 04/14/10 14:00
DateReceived: 04/16/10
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Trichloroethene	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
Vinyl chloride	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
m+p-Xylenes	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
o-Xylene	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
Xylenes, Total	ND	ug/L		1.0		SW8260B	04/22/10 19:02 / jrj
Surr: Dibromofluoromethane	93.0	%REC		77-126		SW8260B	04/22/10 19:02 / jrj
Surr: 1,2-Dichloroethane-d4	90.0	%REC		70-130		SW8260B	04/22/10 19:02 / jrj
Surr: Toluene-d8	104	%REC		79-122		SW8260B	04/22/10 19:02 / jrj
Surr: p-Bromofluorobenzene	102	%REC		76-127		SW8260B	04/22/10 19:02 / jrj

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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QA/QC Summary Report

Client: Encana Oil and Gas USA Inc
Project: Tribal Pavillion 24-3 (VRP)

Report Date: 04/30/10
Work Order: B10041458

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: R146542
Sample ID: blk042210	Method Blank				Run: 5971A.I_100422A				04/22/10 11:50
Benzene	ND	ug/L	1.0						
Bromobenzene	ND	ug/L	1.0						
Bromochloromethane	ND	ug/L	1.0						
Bromodichloromethane	ND	ug/L	1.0						
Bromoform	ND	ug/L	1.0						
Bromomethane	ND	ug/L	1.0						
Carbon tetrachloride	ND	ug/L	1.0						
Chlorobenzene	ND	ug/L	1.0						
Chlorodibromomethane	ND	ug/L	1.0						
Chloroethane	ND	ug/L	1.0						
Chloroform	ND	ug/L	1.0						
Chloromethane	ND	ug/L	1.0						
2-Chloroethyl vinyl ether	ND	ug/L	1.0						
1,2-Dibromoethane	ND	ug/L	1.0						
2-Chlorotoluene	ND	ug/L	1.0						
Dibromomethane	ND	ug/L	1.0						
1,2-Dichlorobenzene	ND	ug/L	1.0						
4-Chlorotoluene	ND	ug/L	1.0						
1,3-Dichlorobenzene	ND	ug/L	1.0						
1,4-Dichlorobenzene	ND	ug/L	1.0						
Dichlorodifluoromethane	ND	ug/L	1.0						
1,1-Dichloroethane	ND	ug/L	1.0						
1,2-Dichloroethane	ND	ug/L	1.0						
1,1-Dichloroethene	ND	ug/L	1.0						
cis-1,2-Dichloroethene	ND	ug/L	1.0						
trans-1,2-Dichloroethene	ND	ug/L	1.0						
1,2-Dichloropropane	ND	ug/L	1.0						
1,3-Dichloropropane	ND	ug/L	1.0						
2,2-Dichloropropane	ND	ug/L	1.0						
1,1-Dichloropropene	ND	ug/L	1.0						
cis-1,3-Dichloropropene	ND	ug/L	1.0						
trans-1,3-Dichloropropene	ND	ug/L	1.0						
Ethylbenzene	ND	ug/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	ug/L	1.0						
Methyl ethyl ketone	ND	ug/L	20						
Methylene chloride	ND	ug/L	1.0						
Styrene	ND	ug/L	1.0						
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0						
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0						
Tetrachloroethene	ND	ug/L	1.0						
Toluene	ND	ug/L	1.0						
1,1,1-Trichloroethane	ND	ug/L	1.0						
1,1,2-Trichloroethane	ND	ug/L	1.0						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

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QA/QC Summary Report

Client: Encana Oil and Gas USA Inc
Project: Tribal Pavillion 24-3 (VRP)

Report Date: 04/30/10
Work Order: B10041458

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: R146542
Sample ID: blk042210	Method Blank				Run: 5971A.I_100422A				04/22/10 11:50
Trichloroethene	ND	ug/L	1.0						
Trichlorofluoromethane	ND	ug/L	1.0						
1,2,3-Trichloropropane	ND	ug/L	1.0						
Vinyl chloride	ND	ug/L	1.0						
m+p-Xylenes	ND	ug/L	1.0						
o-Xylene	ND	ug/L	1.0						
Xylenes, Total	ND	ug/L	1.0						
Surr: 1,2-Dichloroethane-d4			1.0	95	70	130			
Surr: Dibromofluoromethane			1.0	98	77	126			
Surr: p-Bromofluorobenzene			1.0	103	76	127			
Surr: Toluene-d8			1.0	101	79	122			
Sample ID: lcs042210	Laboratory Control Sample				Run: 5971A.I_100422A				04/22/10 10:34
Benzene	4.88	ug/L	1.0	98	71	133			
Bromobenzene	4.76	ug/L	1.0	95	78	133			
Bromochloromethane	4.88	ug/L	1.0	98	68	131			
Bromodichloromethane	4.80	ug/L	1.0	96	67	138			
Bromoform	4.24	ug/L	1.0	85	64	136			
Bromomethane	5.28	ug/L	1.0	106	60	138			
Carbon tetrachloride	4.48	ug/L	1.0	90	61	144			
Chlorobenzene	5.00	ug/L	1.0	100	78	136			
Chlorodibromomethane	4.72	ug/L	1.0	94	72	136			
Chloroethane	4.96	ug/L	1.0	99	64	136			
Chloroform	4.76	ug/L	1.0	95	69	133			
Chloromethane	4.56	ug/L	1.0	91	63	149			
2-Chloroethyl vinyl ether	6.00	ug/L	1.0	120	64	132			
1,2-Dibromoethane	4.96	ug/L	1.0	99	75	131			
2-Chlorotoluene	5.08	ug/L	1.0	102	74	135			
Dibromomethane	4.96	ug/L	1.0	99	72	133			
1,2-Dichlorobenzene	5.16	ug/L	1.0	103	78	129			
4-Chlorotoluene	5.20	ug/L	1.0	104	79	135			
1,3-Dichlorobenzene	5.00	ug/L	1.0	100	79	132			
1,4-Dichlorobenzene	5.04	ug/L	1.0	101	78	131			
Dichlorodifluoromethane	5.28	ug/L	1.0	106	55	141			
1,1-Dichloroethane	4.64	ug/L	1.0	93	72	130			
1,2-Dichloroethane	4.44	ug/L	1.0	89	57	146			
1,1-Dichloroethene	4.44	ug/L	1.0	89	66	142			
cis-1,2-Dichloroethene	4.84	ug/L	1.0	97	74	133			
trans-1,2-Dichloroethene	4.80	ug/L	1.0	96	76	138			
1,2-Dichloropropane	4.84	ug/L	1.0	97	72	135			
1,3-Dichloropropane	5.16	ug/L	1.0	103	75	134			
2,2-Dichloropropane	5.00	ug/L	1.0	100	42	167			
1,1-Dichloropropene	4.96	ug/L	1.0	99	72	140			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

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QA/QC Summary Report

Client: Encana Oil and Gas USA Inc
Project: Tribal Pavillion 24-3 (VRP)

Report Date: 04/30/10
Work Order: B10041458

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: R146542
Sample ID: lcs042210	Laboratory Control Sample				Run: 5971A.I_100422A				04/22/10 10:34
cis-1,3-Dichloropropene	5.04	ug/L	1.0	101	75	132			
trans-1,3-Dichloropropene	5.08	ug/L	1.0	102	77	145			
Ethylbenzene	5.04	ug/L	1.0	101	78	131			
Methyl tert-butyl ether (MTBE)	3.40	ug/L	1.0	68	58	151			
Methyl ethyl ketone	49.2	ug/L	20	98	55	145			
Methylene chloride	4.52	ug/L	1.0	90	73	126			
Styrene	5.04	ug/L	1.0	101	76	134			
1,1,1,2-Tetrachloroethane	4.88	ug/L	1.0	98	75	135			
1,1,2,2-Tetrachloroethane	5.00	ug/L	1.0	100	72	132			
Tetrachloroethene	5.00	ug/L	1.0	100	78	137			
Toluene	5.28	ug/L	1.0	106	78	134			
1,1,1-Trichloroethane	4.56	ug/L	1.0	91	64	141			
1,1,2-Trichloroethane	3.75	ug/L	1.0	75	72	133			
Trichloroethene	5.04	ug/L	1.0	101	75	138			
Trichlorofluoromethane	4.56	ug/L	1.0	91	58	139			
1,2,3-Trichloropropane	4.32	ug/L	1.0	86	67	133			
Vinyl chloride	4.40	ug/L	1.0	88	66	140			
m+p-Xylenes	10.5	ug/L	1.0	105	78	133			
o-Xylene	4.60	ug/L	1.0	92	79	136			
Surr: 1,2-Dichloroethane-d4			1.0	98	70	130			
Surr: Dibromofluoromethane			1.0	99	77	126			
Surr: p-Bromofluorobenzene			1.0	106	76	127			
Surr: Toluene-d8			1.0	110	79	122			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

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QA/QC Summary Report

Client: Encana Oil and Gas USA Inc
Project: Tribal Pavillion 24-3 (VRP)

Report Date: 04/30/10
Work Order: B10041458

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: R146580
Sample ID: lcs042310	Laboratory Control Sample				Run: 5971A.I_100423A				04/23/10 10:20
Benzene	5.32	ug/L	1.0	106	71	133			
Bromobenzene	5.04	ug/L	1.0	101	78	133			
Bromochloromethane	5.16	ug/L	1.0	103	68	131			
Bromodichloromethane	5.08	ug/L	1.0	102	67	138			
Bromoform	4.40	ug/L	1.0	88	64	136			
Bromomethane	5.64	ug/L	1.0	113	60	138			
Carbon tetrachloride	4.48	ug/L	1.0	90	61	144			
Chlorobenzene	5.40	ug/L	1.0	108	78	136			
Chlorodibromomethane	5.08	ug/L	1.0	102	72	136			
Chloroethane	5.52	ug/L	1.0	110	64	136			
Chloroform	4.92	ug/L	1.0	98	69	133			
Chloromethane	5.00	ug/L	1.0	100	63	149			
2-Chloroethyl vinyl ether	5.08	ug/L	1.0	102	64	132			
1,2-Dibromoethane	5.32	ug/L	1.0	106	75	131			
2-Chlorotoluene	5.76	ug/L	1.0	115	74	135			
Dibromomethane	5.32	ug/L	1.0	106	72	133			
1,2-Dichlorobenzene	5.60	ug/L	1.0	112	78	129			
4-Chlorotoluene	5.80	ug/L	1.0	116	79	135			
1,3-Dichlorobenzene	5.48	ug/L	1.0	110	79	132			
1,4-Dichlorobenzene	5.48	ug/L	1.0	110	78	131			
Dichlorodifluoromethane	6.08	ug/L	1.0	122	55	141			
1,1-Dichloroethane	4.84	ug/L	1.0	97	72	130			
1,2-Dichloroethane	4.84	ug/L	1.0	97	57	146			
1,1-Dichloroethene	4.56	ug/L	1.0	91	66	142			
cis-1,2-Dichloroethene	5.04	ug/L	1.0	101	74	133			
trans-1,2-Dichloroethene	4.84	ug/L	1.0	97	76	138			
1,2-Dichloropropane	5.24	ug/L	1.0	105	72	135			
1,3-Dichloropropane	5.72	ug/L	1.0	114	75	134			
2,2-Dichloropropane	5.08	ug/L	1.0	102	42	167			
1,1-Dichloropropene	5.28	ug/L	1.0	106	72	140			
cis-1,3-Dichloropropene	5.36	ug/L	1.0	107	75	132			
trans-1,3-Dichloropropene	5.64	ug/L	1.0	113	77	145			
Ethylbenzene	5.28	ug/L	1.0	106	78	131			
Methyl tert-butyl ether (MTBE)	4.88	ug/L	1.0	98	58	151			
Methyl ethyl ketone	46.4	ug/L	20	93	55	145			
Methylene chloride	4.92	ug/L	1.0	98	73	126			
Styrene	5.48	ug/L	1.0	110	76	134			
1,1,1,2-Tetrachloroethane	5.24	ug/L	1.0	105	75	135			
1,1,2,2-Tetrachloroethane	5.40	ug/L	1.0	108	72	132			
Tetrachloroethene	5.16	ug/L	1.0	103	78	137			
Toluene	5.60	ug/L	1.0	112	78	134			
1,1,1-Trichloroethane	4.76	ug/L	1.0	95	64	141			
1,1,2-Trichloroethane	5.36	ug/L	1.0	107	72	133			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

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QA/QC Summary Report

Client: Encana Oil and Gas USA Inc
Project: Tribal Pavillion 24-3 (VRP)

Report Date: 04/30/10
Work Order: B10041458

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: R146580
Sample ID: lcs042310	Laboratory Control Sample				Run: 5971A.I_100423A				04/23/10 10:20
Trichloroethene	5.36	ug/L	1.0	107	75	138			
Trichlorofluoromethane	5.08	ug/L	1.0	102	58	139			
1,2,3-Trichloropropane	4.60	ug/L	1.0	92	67	133			
Vinyl chloride	4.84	ug/L	1.0	97	66	140			
m+p-Xylenes	11.1	ug/L	1.0	111	78	133			
o-Xylene	5.28	ug/L	1.0	106	79	136			
Surr: 1,2-Dichloroethane-d4			1.0	98	70	130			
Surr: Dibromofluoromethane			1.0	97	77	126			
Surr: p-Bromofluorobenzene			1.0	106	76	127			
Surr: Toluene-d8			1.0	110	79	122			
Sample ID: b10041458-001cms	Sample Matrix Spike				Run: 5971A.I_100423A				04/23/10 20:17
Bromobenzene	5.16	ug/L	1.0	103	78	133			
Bromochloromethane	4.92	ug/L	1.0	98	68	131			
Bromodichloromethane	2.69	ug/L	1.0	54	67	138			S
Bromoform	4.12	ug/L	1.0	82	64	136			
Bromomethane	5.36	ug/L	1.0	107	60	138			
Carbon tetrachloride	3.74	ug/L	1.0	75	61	144			
Chlorobenzene	5.08	ug/L	1.0	102	78	136			
Chlorodibromomethane	4.84	ug/L	1.0	97	72	136			
Chloroethane	5.64	ug/L	1.0	113	64	136			
Chloroform	4.64	ug/L	1.0	93	69	133			
Chloromethane	5.44	ug/L	1.0	109	63	149			
2-Chloroethyl vinyl ether	1.00	ug/L	1.0	20	64	132			S
1,2-Dibromoethane	4.96	ug/L	1.0	99	75	131			
2-Chlorotoluene	5.72	ug/L	1.0	114	74	135			
Dibromomethane	5.24	ug/L	1.0	105	72	133			
1,2-Dichlorobenzene	5.12	ug/L	1.0	102	78	129			
4-Chlorotoluene	5.48	ug/L	1.0	110	79	135			
1,3-Dichlorobenzene	4.96	ug/L	1.0	99	79	132			
1,4-Dichlorobenzene	4.96	ug/L	1.0	99	78	131			
Dichlorodifluoromethane	5.76	ug/L	1.0	115	55	141			
1,1-Dichloroethane	4.72	ug/L	1.0	94	72	130			
1,2-Dichloroethane	3.60	ug/L	1.0	72	57	146			
1,1-Dichloroethene	3.68	ug/L	1.0	74	66	142			
cis-1,2-Dichloroethene	5.00	ug/L	1.0	100	74	133			
trans-1,2-Dichloroethene	4.68	ug/L	1.0	94	76	138			
1,2-Dichloropropane	5.40	ug/L	1.0	108	72	135			
1,3-Dichloropropane	5.32	ug/L	1.0	106	75	134			
2,2-Dichloropropane	4.00	ug/L	1.0	80	42	167			
1,1-Dichloropropene	4.44	ug/L	1.0	89	72	140			
cis-1,3-Dichloropropene	5.00	ug/L	1.0	100	75	132			
trans-1,3-Dichloropropene	5.04	ug/L	1.0	101	77	145			

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

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QA/QC Summary Report

Client: Encana Oil and Gas USA Inc
Project: Tribal Pavillion 24-3 (VRP)

Report Date: 04/30/10
Work Order: B10041458

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B								Batch: R146580	
Sample ID: b10041458-001cms	Sample Matrix Spike				Run: 5971A.I_100423A			04/23/10 20:17	
Ethylbenzene	9.28	ug/L	1.0	71	78	131			S
Methyl tert-butyl ether (MTBE)	5.32	ug/L	1.0	106	58	151			
Methyl ethyl ketone	61.6	ug/L	20	123	55	145			
Methylene chloride	4.52	ug/L	1.0	90	73	126			
Styrene	3.82	ug/L	1.0	76	76	134			
1,1,1,2-Tetrachloroethane	4.72	ug/L	1.0	94	75	135			
1,1,2,2-Tetrachloroethane	6.20	ug/L	1.0	124	72	132			
Tetrachloroethene	4.60	ug/L	1.0	92	78	137			
Toluene	5.36	ug/L	1.0	104	78	134			
1,1,1-Trichloroethane	4.36	ug/L	1.0	87	64	141			
1,1,2-Trichloroethane	4.12	ug/L	1.0	82	72	133			
Trichloroethene	4.96	ug/L	1.0	99	75	138			
Trichlorofluoromethane	4.60	ug/L	1.0	92	58	139			
1,2,3-Trichloropropane	5.68	ug/L	1.0	114	67	133			
Vinyl chloride	4.72	ug/L	1.0	94	66	140			
o-Xylene	4.84	ug/L	1.0	94	79	136			
Surr: 1,2-Dichloroethane-d4			1.0	93	70	130			
Surr: Dibromofluoromethane			1.0	97	77	126			
Surr: p-Bromofluorobenzene			1.0	100	76	127			
Surr: Toluene-d8			1.0	106	79	122			
Sample ID: b10041458-001cmsd	Sample Matrix Spike Duplicate				Run: 5971A.I_100423A			04/23/10 20:54	
Bromobenzene	5.12	ug/L	1.0	102	78	133	0.8	20	
Bromochloromethane	5.00	ug/L	1.0	100	68	131	1.6	20	
Bromodichloromethane	2.74	ug/L	1.0	55	67	138	1.8	20	S
Bromoform	4.20	ug/L	1.0	84	64	136	1.9	20	
Bromomethane	5.48	ug/L	1.0	110	60	138	2.2	20	
Carbon tetrachloride	3.69	ug/L	1.0	74	61	144	1.4	20	
Chlorobenzene	5.16	ug/L	1.0	103	78	136	1.6	20	
Chlorodibromomethane	4.84	ug/L	1.0	97	72	136	0	20	
Chloroethane	5.60	ug/L	1.0	112	64	136	0.7	20	
Chloroform	4.52	ug/L	1.0	90	69	133	2.6	20	
Chloromethane	5.60	ug/L	1.0	112	63	149	2.9	20	
2-Chloroethyl vinyl ether	2.89	ug/L	1.0	58	64	132	97	20	SR
1,2-Dibromoethane	4.92	ug/L	1.0	98	75	131	0.8	20	
2-Chlorotoluene	6.28	ug/L	1.0	126	74	135	9.3	20	
Dibromomethane	5.28	ug/L	1.0	106	72	133	0.8	20	
1,2-Dichlorobenzene	5.04	ug/L	1.0	101	78	129	1.6	20	
4-Chlorotoluene	5.36	ug/L	1.0	107	79	135	2.2	20	
1,3-Dichlorobenzene	5.00	ug/L	1.0	100	79	132	0.8	20	
1,4-Dichlorobenzene	5.04	ug/L	1.0	101	78	131	1.6	20	
Dichlorodifluoromethane	5.80	ug/L	1.0	116	55	141	0.7	20	
1,1-Dichloroethane	4.56	ug/L	1.0	91	72	130	3.4	20	

Qualifiers:

RL - Analyte reporting limit.
R - RPD exceeds advisory limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

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QA/QC Summary Report

Client: Encana Oil and Gas USA Inc
Project: Tribal Pavillion 24-3 (VRP)

Report Date: 04/30/10
Work Order: B10041458

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B								Batch: R146580	
Sample ID: b10041458-001cmsd	Sample Matrix Spike Duplicate				Run: 5971A.I_100423A			04/23/10 20:54	
1,2-Dichloroethane	3.55	ug/L	1.0	71	57	146	1.3	20	
1,1-Dichloroethene	3.40	ug/L	1.0	68	66	142	7.9	20	
cis-1,2-Dichloroethene	4.80	ug/L	1.0	96	74	133	4.1	20	
trans-1,2-Dichloroethene	4.52	ug/L	1.0	90	76	138	3.5	20	
1,2-Dichloropropane	5.32	ug/L	1.0	106	72	135	1.5	20	
1,3-Dichloropropane	5.28	ug/L	1.0	106	75	134	0.8	20	
2,2-Dichloropropane	3.71	ug/L	1.0	74	42	167	7.6	20	
1,1-Dichloropropene	4.32	ug/L	1.0	86	72	140	2.7	20	
cis-1,3-Dichloropropene	4.84	ug/L	1.0	97	75	132	3.3	20	
trans-1,3-Dichloropropene	5.04	ug/L	1.0	101	77	145	0	20	
Ethylbenzene	9.00	ug/L	1.0	66	78	131	3.1	20	S
Methyl tert-butyl ether (MTBE)	5.16	ug/L	1.0	103	58	151	3.1	20	
Methyl ethyl ketone	61.2	ug/L	20	122	55	145	0.7	20	
Methylene chloride	4.36	ug/L	1.0	87	73	126	3.6	20	
Styrene	3.50	ug/L	1.0	70	76	134	8.5	20	S
1,1,1,2-Tetrachloroethane	4.68	ug/L	1.0	94	75	135	0.9	20	
1,1,2,2-Tetrachloroethane	6.40	ug/L	1.0	128	72	132	3.2	20	
Tetrachloroethene	4.60	ug/L	1.0	92	78	137	0	20	
Toluene	5.28	ug/L	1.0	102	78	134	1.5	20	
1,1,1-Trichloroethane	4.16	ug/L	1.0	83	64	141	4.7	20	
1,1,2-Trichloroethane	4.36	ug/L	1.0	87	72	133	5.7	20	
Trichloroethene	4.96	ug/L	1.0	99	75	138	0	20	
Trichlorofluoromethane	4.44	ug/L	1.0	89	58	139	3.5	20	
1,2,3-Trichloropropane	9.48	ug/L	1.0	190	67	133	50	20	SR
Vinyl chloride	4.64	ug/L	1.0	93	66	140	1.7	20	
o-Xylene	4.36	ug/L	1.0	84	79	136	10	20	
Surr: 1,2-Dichloroethane-d4			1.0	90	70	130			
Surr: Dibromofluoromethane			1.0	93	77	126			
Surr: p-Bromofluorobenzene			1.0	104	76	127			
Surr: Toluene-d8			1.0	106	79	122			
Sample ID: b10041458-001cms	Sample Duplicate				Run: 5971A.I_100423A			04/23/10 20:17	
Benzene	56.0	ug/L	1.0				21	20	R
m+p-Xylenes	39.1	ug/L	1.0				8.5	20	
Sample ID: b10041458-001cmsd	Sample Duplicate				Run: 5971A.I_100423A			04/23/10 20:54	
Benzene	54.4	ug/L	1.0				24	20	R
m+p-Xylenes	37.8	ug/L	1.0				12	20	

- Because the sample amount was significantly higher than the spike amount, the MS and MSD spike samples for these compounds are calculated as Duplicate samples based on the spike amount added plus the original sample concentration.

Qualifiers:

RL - Analyte reporting limit.
R - RPD exceeds advisory limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

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QA/QC Summary Report

Client: Encana Oil and Gas USA Inc
Project: Tribal Pavillion 24-3 (VRP)

Report Date: 04/30/10
Work Order: B10041458

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: R146770
Sample ID: lcs042810	Laboratory Control Sample				Run: 5971A.I_100428A				04/28/10 11:08
Benzene	5.40	ug/L	1.0	108	71	133			
Ethylbenzene	5.24	ug/L	1.0	105	78	131			
m+p-Xylenes	10.6	ug/L	1.0	106	78	133			
o-Xylene	5.40	ug/L	1.0	108	79	136			
Surr: 1,2-Dichloroethane-d4			1.0	91	70	130			
Surr: Dibromofluoromethane			1.0	92	77	126			
Surr: p-Bromofluorobenzene			1.0	104	76	127			
Surr: Toluene-d8			1.0	105	79	122			
Sample ID: blk042810	Method Blank				Run: 5971A.I_100428A				04/28/10 12:59
Benzene	ND	ug/L	1.0						
Ethylbenzene	ND	ug/L	1.0						
m+p-Xylenes	ND	ug/L	1.0						
o-Xylene	ND	ug/L	1.0						
Xylenes, Total	ND	ug/L	1.0						
Surr: 1,2-Dichloroethane-d4			1.0	92	70	130			
Surr: Dibromofluoromethane			1.0	91	77	126			
Surr: p-Bromofluorobenzene			1.0	96	76	127			
Surr: Toluene-d8			1.0	98	79	122			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

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QA/QC Summary Report

Client: Encana Oil and Gas USA Inc
Project: Tribal Pavillion 24-3 (VRP)

Report Date: 04/30/10
Work Order: B10041458

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8015M as G									Analytical Run: R146420
Sample ID: CCV_0420VAR03r-W	Continuing Calibration Verification Standard								04/20/10 10:04
2-Methylpentane	33.7	ug/L	1.0	112	75	125			
Benzene	10.8	ug/L	1.0	108	75	125			
2,2,4-Trimethylpentane	34.0	ug/L	1.0	113	75	125			
Toluene	32.9	ug/L	1.0	110	75	125			
Ethylbenzene	10.9	ug/L	1.0	109	75	125			
m+p-Xylenes	43.5	ug/L	1.0	109	75	125			
n-Heptane	11.7	ug/L	1.0	117	75	125			
o-Xylene	21.0	ug/L	1.0	105	75	125			
1,2,4-Trimethylbenzene	20.7	ug/L	1.0	103	75	125			
Total GRO	219	ug/L		110	75	125			
Surr: Trifluorotoluene			1.0	92	75	125			
Sample ID: CCV_0420VAR25r-W	Continuing Calibration Verification Standard								04/20/10 22:39
2-Methylpentane	30.4	ug/L	1.0	101	75	125			
Benzene	10.3	ug/L	1.0	103	75	125			
2,2,4-Trimethylpentane	30.0	ug/L	1.0	100	75	125			
Toluene	30.4	ug/L	1.0	101	75	125			
Ethylbenzene	10.4	ug/L	1.0	104	75	125			
m+p-Xylenes	41.8	ug/L	1.0	104	75	125			
n-Heptane	10.6	ug/L	1.0	106	75	125			
o-Xylene	21.0	ug/L	1.0	105	75	125			
1,2,4-Trimethylbenzene	20.3	ug/L	1.0	101	75	125			
Total GRO	205	ug/L		103	75	125			
Surr: Trifluorotoluene			1.0	90	75	125			
Method: SW8015M as G									Batch: R146420
Sample ID: LCS_0420VAR04r	Laboratory Control Sample				Run: VARIAN1_100420A				04/20/10 10:51
Total Purgeable Hydrocarbons	144	ug/L	20	72	50	100			
Surr: Trifluorotoluene			1.0	96	50	150			
Sample ID: MBLK_0420VAR05r	Method Blank				Run: VARIAN1_100420A				04/20/10 11:24
Gasoline Range Organics (GRO)	ND	ug/L	20						
GRO as Gasoline	ND	ug/L	20						
Total Purgeable Hydrocarbons	ND	ug/L	20						
Surr: Trifluorotoluene			1.0	95	50	150			
Sample ID: B10041458-003BMS	Sample Matrix Spike				Run: VARIAN1_100420A				04/20/10 20:24
Total Purgeable Hydrocarbons	276	ug/L	20	69	50	100			
Surr: Trifluorotoluene			1.0	97	50	150			
Sample ID: B10041458-003BMSD	Sample Matrix Spike Duplicate				Run: VARIAN1_100420A				04/20/10 20:58
Total Purgeable Hydrocarbons	292	ug/L	20	73	50	100	5.7	20	
Surr: Trifluorotoluene			1.0	99	50	150			

Qualifiers:

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ND - Not detected at the reporting limit.

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QA/QC Summary Report

Client: Encana Oil and Gas USA Inc
Project: Tribal Pavillion 24-3 (VRP)

Report Date: 04/30/10
Work Order: B10041458

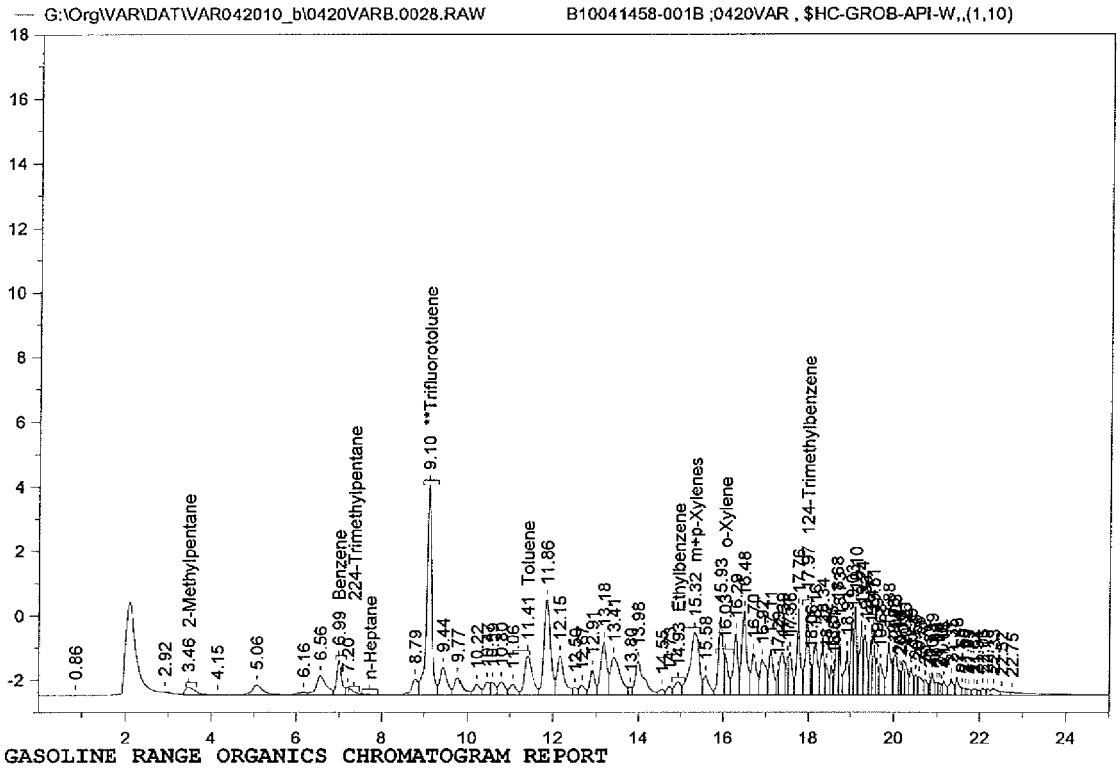
Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8015M as G									Batch: R146420
Sample ID: LCS_0420VAR26r	Laboratory Control Sample				Run: VARIAN1_100420A				04/20/10 23:13
Total Purgeable Hydrocarbons	134	ug/L	20	67	50	100			
Surr: Trifluorotoluene			1.0	85	50	150			
Sample ID: MBLK_0420VAR27r	Method Blank				Run: VARIAN1_100420A				04/20/10 23:46
Gasoline Range Organics (GRO)	ND	ug/L	20						
GRO as Gasoline	ND	ug/L	20						
Total Purgeable Hydrocarbons	ND	ug/L	20						
Surr: Trifluorotoluene			1.0	87	50	150			
Method: SW8015M as G									Analytical Run: R146477
Sample ID: CCV_0421VAR03r-W	Continuing Calibration Verification Standard								04/21/10 10:05
2-Methylpentane	32.5	ug/L	1.0	108	75	125			
Benzene	10.7	ug/L	1.0	107	75	125			
2,2,4-Trimethylpentane	31.9	ug/L	1.0	106	75	125			
Toluene	31.9	ug/L	1.0	106	75	125			
Ethylbenzene	10.6	ug/L	1.0	106	75	125			
m+p-Xylenes	42.3	ug/L	1.0	106	75	125			
n-Heptane	11.6	ug/L	1.0	116	75	125			
o-Xylene	20.6	ug/L	1.0	103	75	125			
1,2,4-Trimethylbenzene	19.5	ug/L	1.0	98	75	125			
Total GRO	212	ug/L		106	75	125			
Surr: Trifluorotoluene			1.0	98	75	125			
Method: SW8015M as G									Batch: R146477
Sample ID: LCS_0421VAR04r	Laboratory Control Sample				Run: VARIAN1_100421B				04/21/10 10:48
Total Purgeable Hydrocarbons	139	ug/L	20	70	50	100			
Surr: Trifluorotoluene			1.0	102	50	150			
Sample ID: MBLK_0421VAR05r	Method Blank				Run: VARIAN1_100421B				04/21/10 11:23
Gasoline Range Organics (GRO)	ND	ug/L	20						
GRO as Gasoline	ND	ug/L	20						
Total Purgeable Hydrocarbons	ND	ug/L	20						
Surr: Trifluorotoluene			1.0	97	50	150			
Sample ID: B10041800-002CMS	Sample Matrix Spike				Run: VARIAN1_100421B				04/22/10 15:22
Total Purgeable Hydrocarbons	293	ug/L	20	73	50	100			
Surr: Trifluorotoluene			1.0	102	50	150			
Sample ID: B10041800-002CMSD	Sample Matrix Spike Duplicate				Run: VARIAN1_100421B				04/22/10 15:55
Total Purgeable Hydrocarbons	291	ug/L	20	73	50	100	0.6	20	
Surr: Trifluorotoluene			1.0	101	50	150			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

TP 24-3 MW-1



GASOLINE RANGE ORGANICS CHROMATOGRAM REPORT

Sample Name: B10041458-001B ;0420VAR , $HC-GROB-API-W,,(1,10)
Raw File: G:\Org\VAR\DAT\VAR042010_b\0420VARB.0028.RAW
Date & Time Acquired: 4/21/2010 12:20:57 AM
Method File: G:\Org\VAR\Methods\0210V14581xB.MET
Calibration File: G:\Org\VAR\Cals\0210VARb.CAL
Sample Weight: 5 Dilution: 10 S.A.: 10

Mean RF for all calibrated compounds: 241.6774
Rt range for Gasoline Range Organics: 3.408 to 18.047

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
**Trifluorotoluene	9.103	500.	535.328	107.07	-

GRO Area:389925.5 GRO Amount: 3226.826
TPH Area:596876.7 TPH Amount: 4939.449

TP 24-3 MW-2

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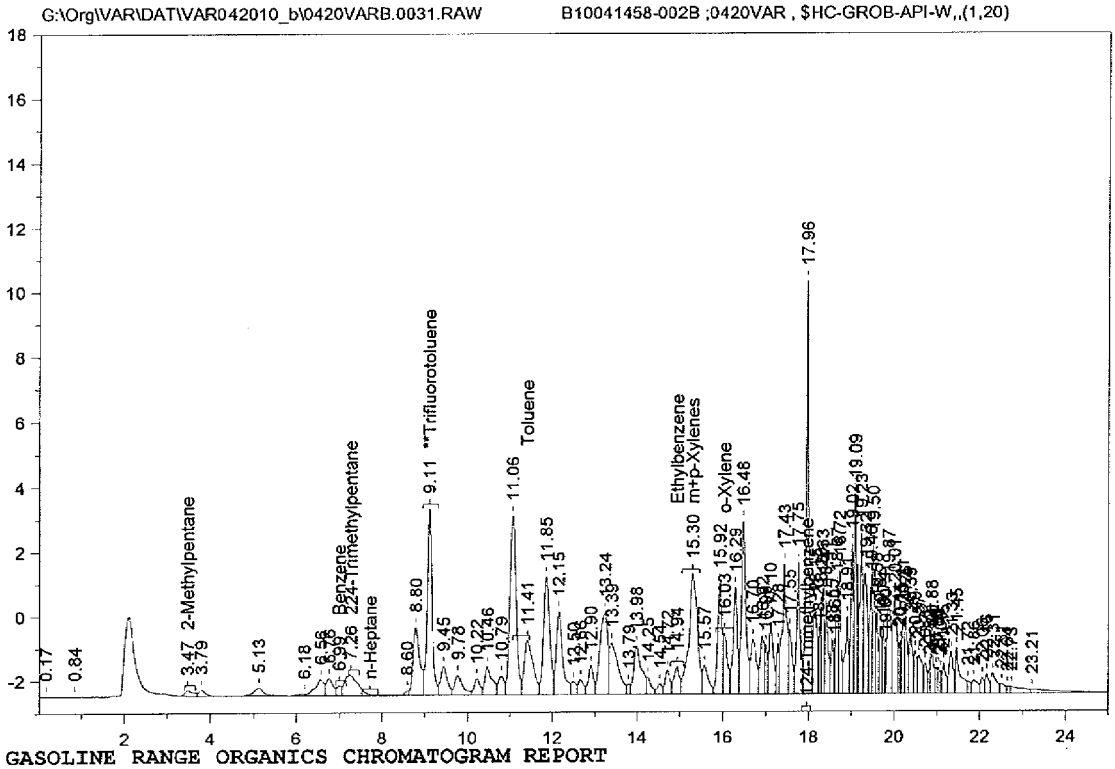


GASOLINE RANGE ORGANICS CHROMATOGRAM REPORT

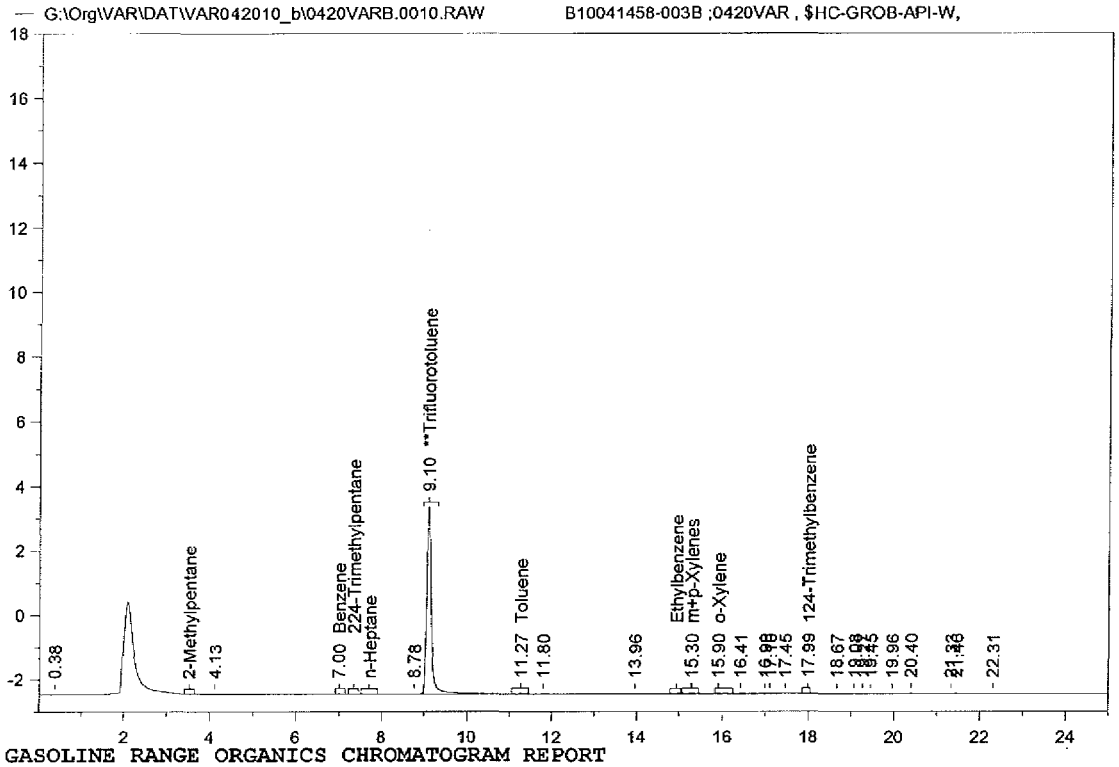
Sample Name: B10041458-002B ;0420VAR , $HC-GROB-API-W,,(1,20)
Raw File: G:\Org\VAR\DAT\VAR042010_b\0420VARB.0031.RAW
Date & Time Acquired: 4/21/2010 2:01:15 AM
Method File: G:\Org\VAR\Methods\0210V14582xB.MET
Calibration File: G:\Org\VAR\Cals\0210VARb.CAL
Sample Weight: 5 Dilution: 20 S.A.: 20

Mean RF for all calibrated compounds: 241.6774
Rt range for Gasoline Range Organics: 3.408 to 18.047

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
**Trifluorotoluene	9.108	1000.	921.349	92.13	-

GRO Area:700795.7 GRO Amount: 11598.86
TPH Area:1123085 TPH Amount: 18588.17

TP 24-3 MW-3



GASOLINE RANGE ORGANICS CHROMATOGRAM REPORT

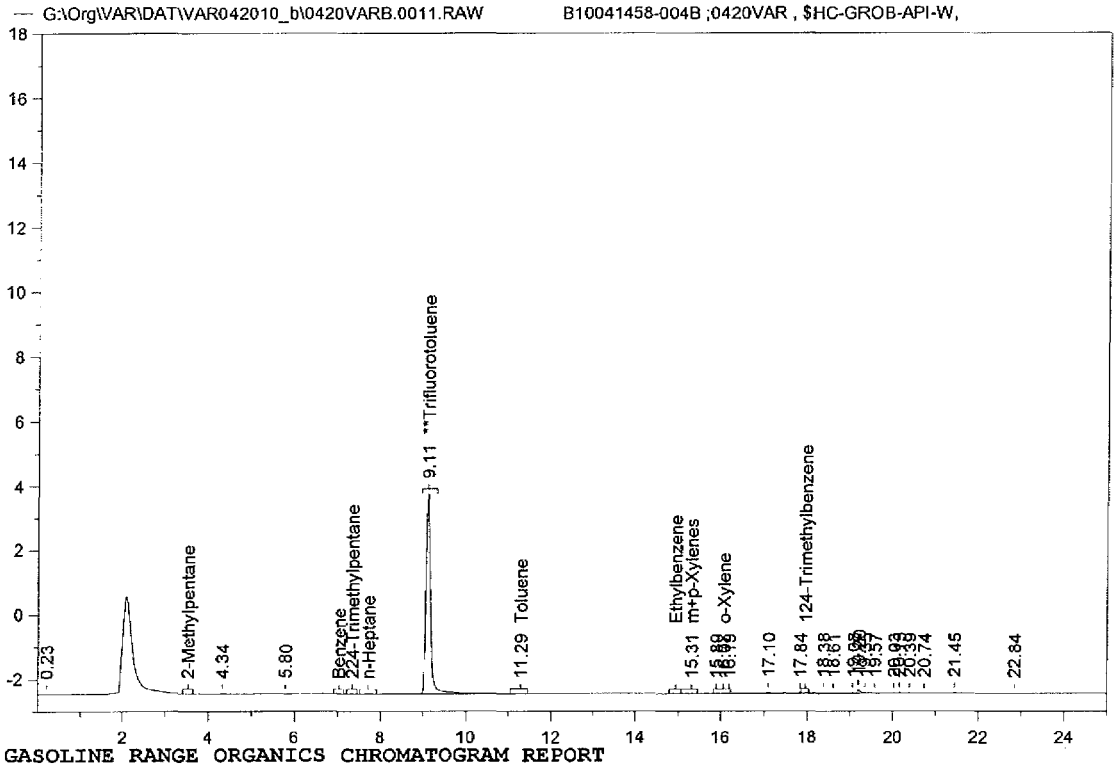
Sample Name: B10041458-003B ;0420VAR , $HC-GROB-API-W,
Raw File: G:\Org\VAR\DAT\VAR042010_b\0420VARB.0010.RAW
Date & Time Acquired: 4/20/2010 2:12:42 PM
Method File: G:\Org\VAR\Methods\0210V14583B.MET
Calibration File: G:\Org\VAR\Cals\0210VARb.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

Mean RF for all calibrated compounds: 241.6774
Rt range for Gasoline Range Organics: 3.408 to 18.047

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
**Trifluorotoluene	9.098	50.	44.423	88.85

GRO Area:1224.434 GRO Amount: 1.01328
TPH Area:1944.675 TPH Amount: 1.609314

TP 24-3 MW-4



GASOLINE RANGE ORGANICS CHROMATOGRAM REPORT

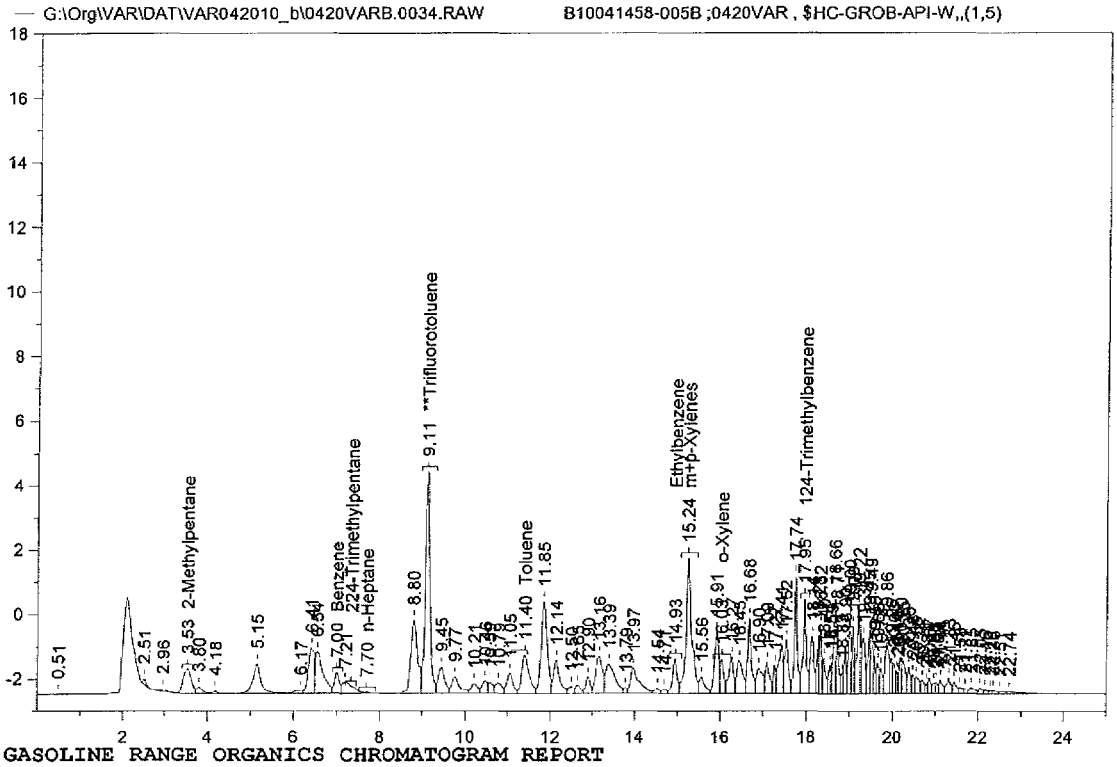
Sample Name: B10041458-004B ;0420VAR , $HC-GROB-API-W,
Raw File: G:\Org\VAR\DAT\VAR042010_b\0420VARB.0011.RAW
Date & Time Acquired: 4/20/2010 2:46:05 PM
Method File: G:\Org\VAR\Methods\0210VARB.MET
Calibration File: G:\Org\VAR\Cals\0210VARb.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

Mean RF for all calibrated compounds: 241.6774
Rt range for Gasoline Range Organics: 3.408 to 18.047

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
**Trifluorotoluene	9.109	50.	46.465	92.93

GRO Area:738.4964 GRO Amount: 0.6111422
TPH Area:2061.922 TPH Amount: 1.706342

TP 24-3 MW-5



GASOLINE RANGE ORGANICS CHROMATOGRAM REPORT

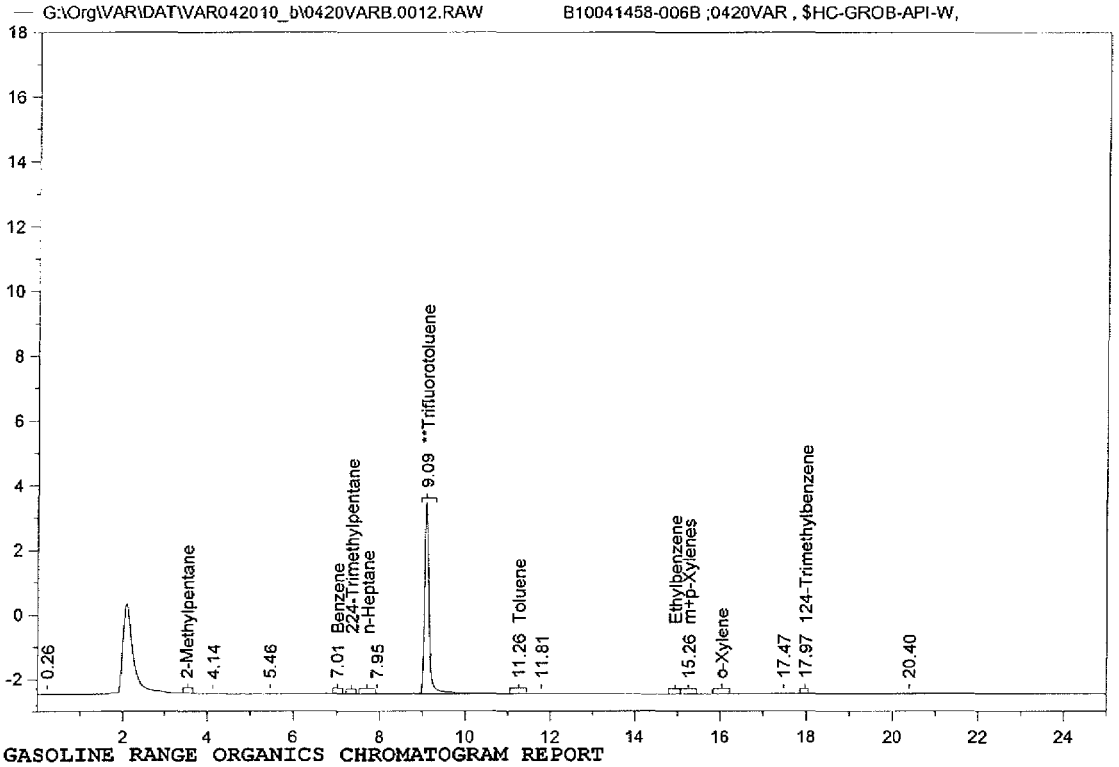
Sample Name: B10041458-005B ;0420VAR , $HC-GROB-API-W,,(1,5)
Raw File: G:\Org\VAR\DAT\VAR042010_b\0420VARB.0034.RAW
Date & Time Acquired: 4/21/2010 3:41:38 AM
Method File: G:\Org\VAR\Methods\0210V14585xB.MET
Calibration File: G:\Org\VAR\Cals\0210VARb.CAL
Sample Weight: 5 Dilution: 5 S.A.: 5

Mean RF for all calibrated compounds: 241.6774
Rt range for Gasoline Range Organics: 3.408 to 18.047

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
**Trifluorotoluene	9.107	250.	267.332	106.93

GRO Area:409924.3 GRO Amount: 1696.163
TPH Area:609240.7 TPH Amount: 2520.884

TP 24-3 MW-6



GASOLINE RANGE ORGANICS CHROMATOGRAM REPORT

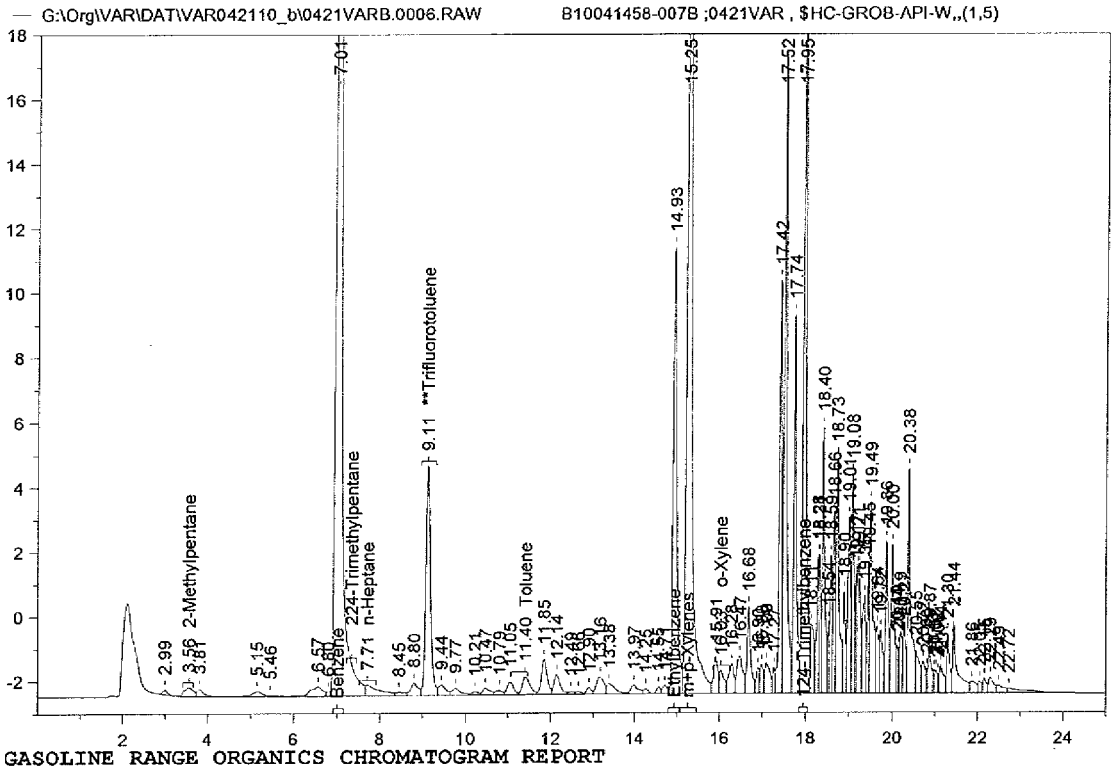
Sample Name: B10041458-006B ;0420VAR , $HC-GROB-API-W,
Raw File: G:\Org\VAR\DAT\VAR042010_b\0420VARB.0012.RAW
Date & Time Acquired: 4/20/2010 3:19:05 PM
Method File: G:\Org\VAR\Methods\0210VARB.MET
Calibration File: G:\Org\VAR\Cals\0210VARb.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

Mean RF for all calibrated compounds: 241.6774
Rt range for Gasoline Range Organics: 3.408 to 18.047

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
**Trifluorotoluene	9.09	50.	45.14	90.28

GRO Area:675.0743 GRO Amount: 0.5586573
TPH Area:721.0732 TPH Amount: 0.5967236

TP 24-3 MW-7



GASOLINE RANGE ORGANICS CHROMATOGRAM REPORT

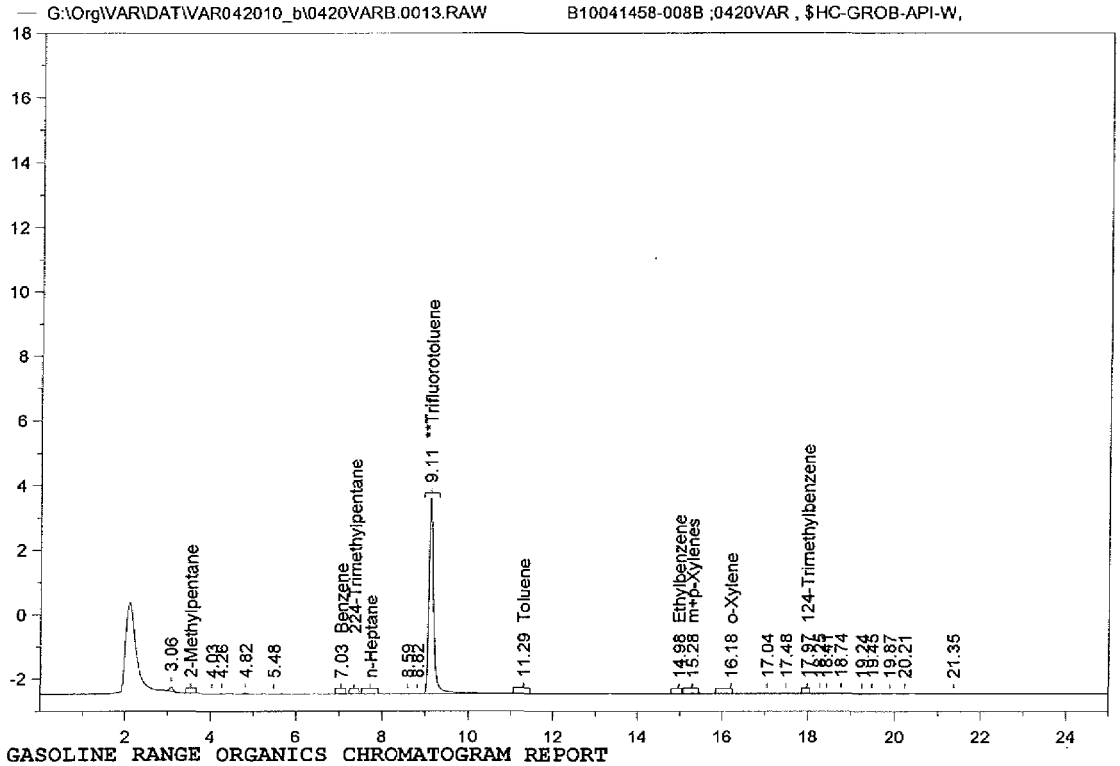
Sample Name: B10041458-007B ;0421VAR , $HC-GROB-API-W,,(1,5)
Raw File: G:\Org\VAR\DAT\VAR042110_b\0421VARB.0006.RAW
Date & Time Acquired: 4/21/2010 11:57:17 AM
Method File: G:\Org\VAR\Methods\0210V14587zB.MET
Calibration File: G:\Org\VAR\Cals\0210VARb.CAL
Sample Weight: 5 Dilution: 5 S.A.: 5

Mean RF for all calibrated compounds: 241.6774
Rt range for Gasoline Range Organics: 3.408 to 18.047

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
**Trifluorotoluene	9.112	250.	261.965	104.79

GRO Area:1189189 GRO Amount: 4920.561
TPH Area:1685897 TPH Amount: 6975.816

TP 24-3 MW-8A



GASOLINE RANGE ORGANICS CHROMATOGRAM REPORT

Sample Name: B10041458-008B ;0420VAR , $HC-GROB-API-W,
Raw File: G:\Org\VAR\DAT\VAR042010_b\0420VARB.0013.RAW
Date & Time Acquired: 4/20/2010 3:52:47 PM
Method File: G:\Org\VAR\Methods\0210V14588B.MET
Calibration File: G:\Org\VAR\Cals\0210VARb.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

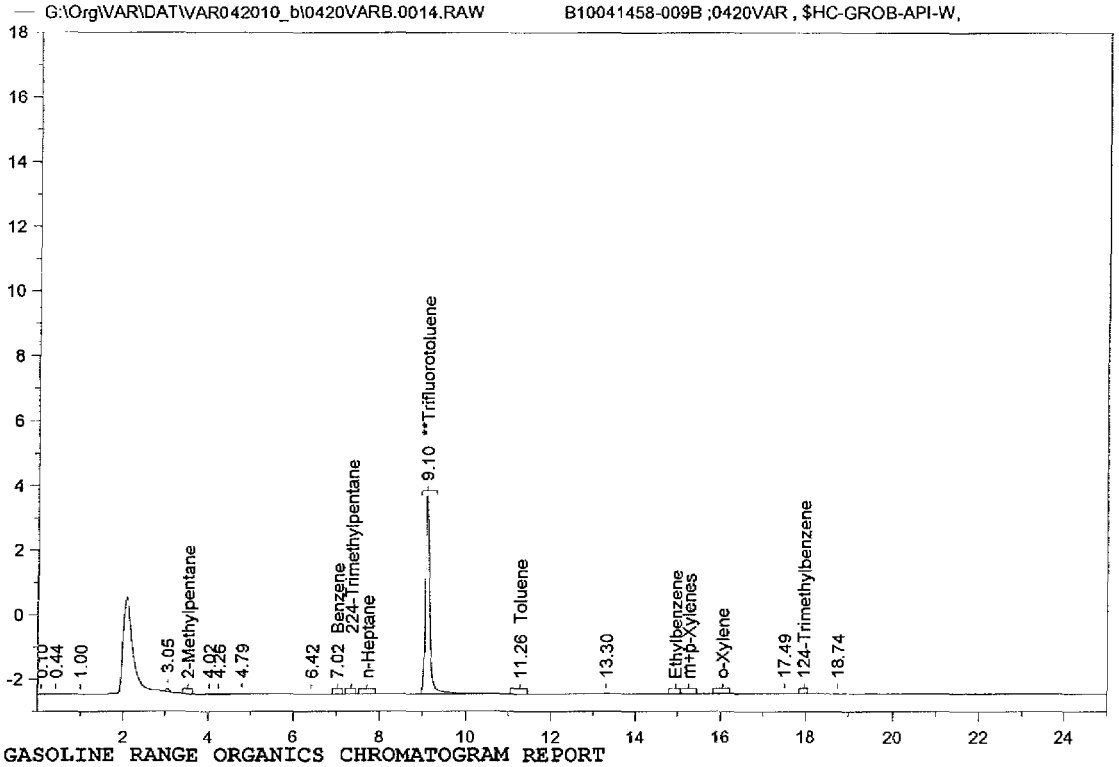
Mean RF for all calibrated compounds: 241.6774
Rt range for Gasoline Range Organics: 3.408 to 18.047

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
**Trifluorotoluene	9.111	50.	46.468	92.94	-

GRO Area:1050.587 GRO Amount: 0.8694123
TPH Area:2244.383 TPH Amount: 1.857338

TP 24-3 MW-8B

G:\Org\VAR\DAT\VAR042010_b\0420VARB.0014.RAW B10041458-009B ;0420VAR , $HC-GROB-API-W,



GASOLINE RANGE ORGANICS CHROMATOGRAM REPORT

Sample Name: B10041458-009B ;0420VAR , $HC-GROB-API-W,
Raw File: G:\Org\VAR\DAT\VAR042010_b\0420VARB.0014.RAW
Date & Time Acquired: 4/20/2010 4:26:15 PM
Method File: G:\Org\VAR\Methods\0210V14589B.MET
Calibration File: G:\Org\VAR\Cals\0210VARb.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

Mean RF for all calibrated compounds: 241.6774
Rt range for Gasoline Range Organics: 3.408 to 18.047

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
**Trifluorotoluene	9.095	50.	45.812	91.62	-

GRO Area:878.4305 GRO Amount: 0.7269446
TPH Area:1609.591 TPH Amount: 1.332016

ENERGY LABORATORIES, INC. * 1120 S 27th St * PO Box 30916 * Billings, MT 59107-0916
Toll Free 800.735.4489 * 406.252.6325 * FAX 406.252.6069 * eli@energylab.com

QA/QC Summary Report

Client: Encana Oil and Gas USA Inc
Project: Tribal Pavillion 24-3 (VRP)

Report Date: 04/30/10
Work Order: B10041458

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8015M as D									Batch: 45734
Sample ID: LCS-45734	Laboratory Control Sample				Run: GCFID-HP3-B_100419E				04/20/10 23:54
Diesel Range Organics (DRO)	15.6	mg/L	0.30	104	60	120			
Total Extractable Hydrocarbons	16.1	mg/L	0.30	107	60	120			
Surr: o-Terphenyl			0.0050	100	50	150			
Sample ID: LCSD-45734	Laboratory Control Sample Duplicate				Run: GCFID-HP3-B_100419E				04/21/10 00:48
Diesel Range Organics (DRO)	15.3	mg/L	0.30	102	60	120	2.1	20	
Total Extractable Hydrocarbons	15.8	mg/L	0.30	105	60	120	2	20	
Surr: o-Terphenyl			0.0050	99	50	150			
Sample ID: MB-45734	Method Blank				Run: GCFID-HP3-B_100419E				04/21/10 01:42
Diesel Range Organics (DRO)	ND	mg/L	0.30						
Diesel Range Organics as Diesel	ND	mg/L	0.30						
Total Extractable Hydrocarbons	ND	mg/L	0.30						
Surr: o-Terphenyl			0.0050	109	50	150			
Sample ID: B10041477-001AMS	Sample Matrix Spike				Run: GCFID-HP3-B_100419E				04/21/10 03:30
Diesel Range Organics (DRO)	32.9	mg/L	0.65	102	60	120			
Total Extractable Hydrocarbons	33.9	mg/L	0.65	105	60	120			
Surr: o-Terphenyl			0.011	99	50	150			
Sample ID: B10041477-001AMSD	Sample Matrix Spike Duplicate				Run: GCFID-HP3-B_100419E				04/21/10 04:23
Diesel Range Organics (DRO)	33.1	mg/L	0.65	103	60	120	0.6	20	
Total Extractable Hydrocarbons	34.1	mg/L	0.65	106	60	120	0.5	20	
Surr: o-Terphenyl			0.011	101	50	150			
Method: SW8015M as D									Analytical Run: R146484
Sample ID: CCV_0416HP279r-W	Continuing Calibration Verification Standard								04/20/10 17:57
n-Decane	0.194	mg/L	0.0050	97	75	125			
n-Dodecane	0.188	mg/L	0.0050	94	75	125			
n-Tetradecane	0.185	mg/L	0.0050	93	75	125			
n-Hexadecane	0.181	mg/L	0.0050	90	75	125			
n-Octadecane	0.184	mg/L	0.0050	92	75	125			
n-Eicosane	0.181	mg/L	0.0050	91	75	125			
n-Docosane	0.181	mg/L	0.0050	90	75	125			
n-Tetracosane	0.181	mg/L	0.0050	90	75	125			
n-Hexacosane	0.184	mg/L	0.0050	92	75	125			
n-Octacosane	0.178	mg/L	0.0050	89	75	125			
Total DRO	1.84	mg/L		83	75	125			
Surr: o-Terphenyl			0.0050	92	75	125			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

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Toll Free 800.735.4489 * 406.252.6325 * FAX 406.252.6069 * eli@energylab.com

QA/QC Summary Report

Client: Encana Oil and Gas USA Inc
Project: Tribal Pavillion 24-3 (VRP)

Report Date: 04/30/10
Work Order: B10041458

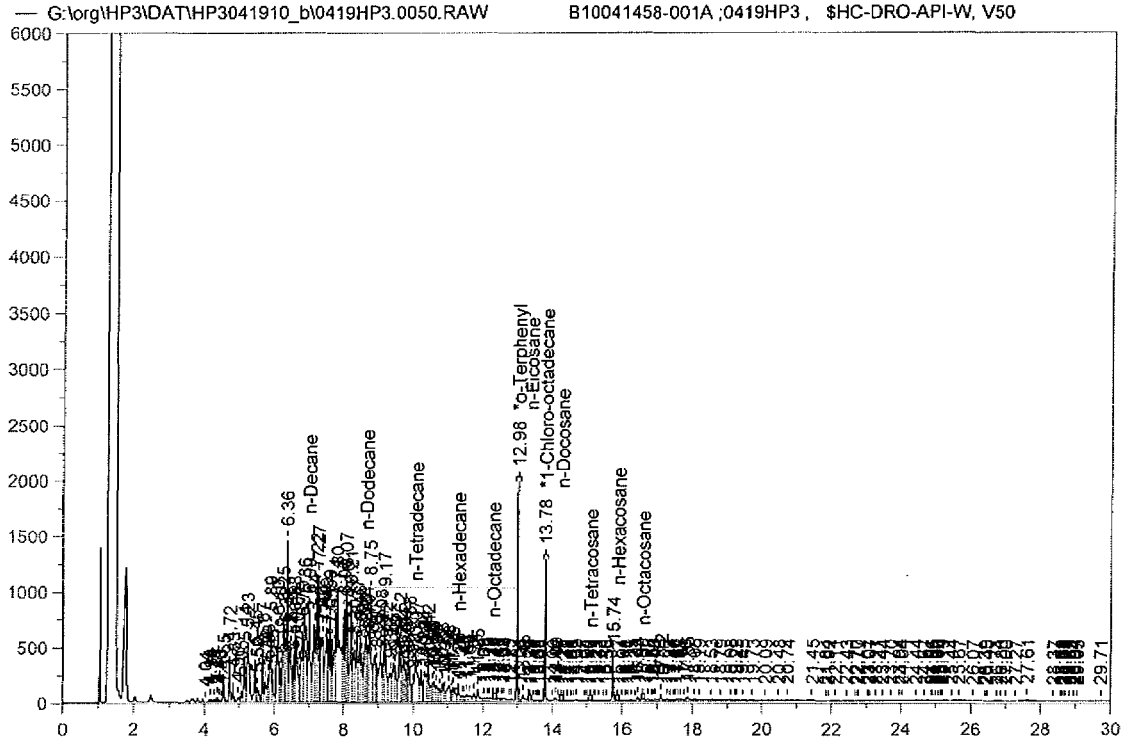
Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8015M as D									Analytical Run: R146571
Sample ID: CCV_0419HP344r DRO A Continuing Calibration Verification Standard									04/21/10 08:54
n-Decane	0.227	mg/L	0.0050	113	75	125			
n-Dodecane	0.226	mg/L	0.0050	113	75	125			
n-Tetradecane	0.224	mg/L	0.0050	112	75	125			
n-Hexadecane	0.223	mg/L	0.0050	112	75	125			
n-Octadecane	0.225	mg/L	0.0050	112	75	125			
n-Eicosane	0.224	mg/L	0.0050	112	75	125			
n-Docosane	0.224	mg/L	0.0050	112	75	125			
n-Tetracosane	0.225	mg/L	0.0050	112	75	125			
n-Hexacosane	0.226	mg/L	0.0050	113	75	125			
n-Octacosane	0.220	mg/L	0.0050	110	75	125			
Total DRO	2.24	mg/L		102	75	125			
Surr: o-Terphenyl			0.0050	113	75	125			
Method: SW8015M as D									Analytical Run: R146590
Sample ID: CCV_0419HP357r DRO A Continuing Calibration Verification Standard									04/21/10 21:00
n-Decane	0.221	mg/L	0.0050	110	75	125			
n-Dodecane	0.219	mg/L	0.0050	109	75	125			
n-Tetradecane	0.218	mg/L	0.0050	109	75	125			
n-Hexadecane	0.217	mg/L	0.0050	108	75	125			
n-Octadecane	0.218	mg/L	0.0050	109	75	125			
n-Eicosane	0.217	mg/L	0.0050	109	75	125			
n-Docosane	0.217	mg/L	0.0050	109	75	125			
n-Tetracosane	0.218	mg/L	0.0050	109	75	125			
n-Hexacosane	0.219	mg/L	0.0050	110	75	125			
n-Octacosane	0.214	mg/L	0.0050	107	75	125			
Total DRO	2.18	mg/L		99	75	125			
Surr: o-Terphenyl			0.0050	110	75	125			
Method: SW8015M as D									Analytical Run: R146842
Sample ID: CCV_0427HP324r-W Continuing Calibration Verification Standard									04/28/10 11:25
n-Decane	0.220	mg/L	0.0050	110	75	125			
n-Dodecane	0.218	mg/L	0.0050	109	75	125			
n-Tetradecane	0.216	mg/L	0.0050	108	75	125			
n-Hexadecane	0.216	mg/L	0.0050	108	75	125			
n-Octadecane	0.217	mg/L	0.0050	109	75	125			
n-Eicosane	0.216	mg/L	0.0050	108	75	125			
n-Docosane	0.216	mg/L	0.0050	108	75	125			
n-Tetracosane	0.217	mg/L	0.0050	108	75	125			
n-Hexacosane	0.218	mg/L	0.0050	109	75	125			
n-Octacosane	0.213	mg/L	0.0050	106	75	125			
Total DRO	2.17	mg/L		99	75	125			
Surr: o-Terphenyl			0.0050	107	75	125			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

TP 24-3 MW-1 Batch ID: 45734



DIESEL RANGE ORGANICS CHROMATOGRAM

Sample Name: B10041458-001A ;0419HP3 , $HC-DRO-API-W, V50
Raw File: G:\org\HP3\DAT\HP3041910_b\0419HP3.0050.RAW
Date & Time Acquired: 4/21/2010 2:20:42 PM
Method File: G:\Org\HP3\Methods\D3000AE%.met
Calibration File: G:\Org\HP3\Cals\DR100112AE.CAL
Sample Weight: 1000 Dilution: 1 S.A.: 1

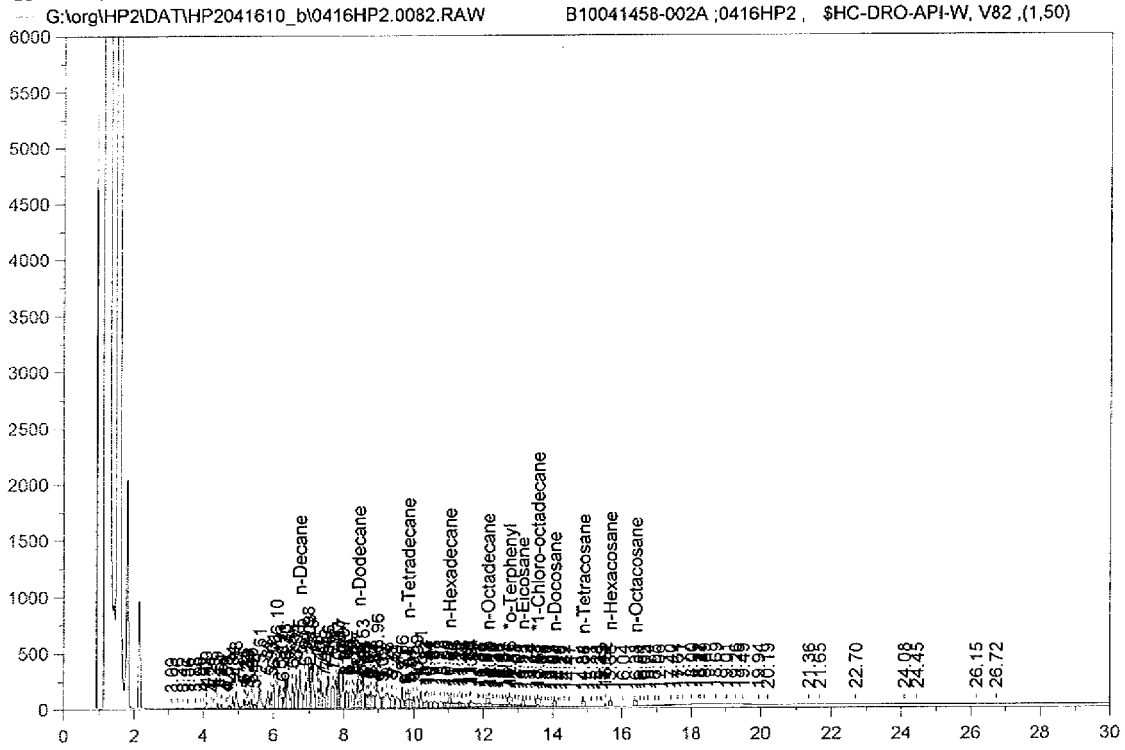
Mean RF for Total Extractable Hydrocarbons: 29437.91
Rt range for Diesel Range Organics (C10 to C28): 6.91 to 16.652

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.984	.2	.103	51.36	-
*1-Chloro-octadecane	13.783	.2	.096	47.78	-

DRO Area:9.564198E+07 DRO AMOUNT: 3.24894
TEH Area:1.374387E+08 TEH AMOUNT: 4.668765

TP 24-3 MW-2 Batch ID: 45734

G:\org\HP2\DAT\HP2041610_b\0416HP2.0082.RAW B10041458-002A ;0416HP2 , $HC-DRO-API-W, V82 ,(1,50)



DIESEL RANGE ORGANICS CHROMATOGRAM

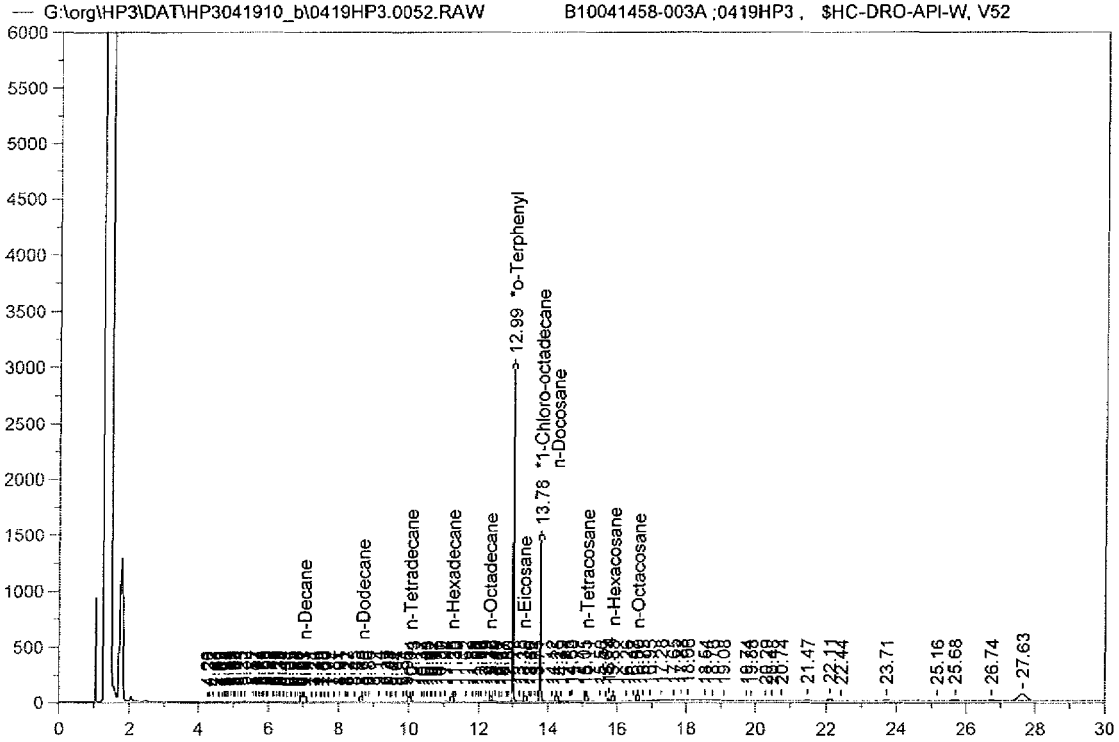
Sample Name: B10041458-002A ;0416HP2 , $HC-DRO-API-W, V82 ,(1,50)
Raw File: G:\org\HP2\DAT\HP2041610_b\0416HP2.0082.RAW
Date & Time Acquired: 4/20/2010 8:23:59 PM
Method File: G:\Org\HP2\Methods\DR000JR%.met
Calibration File: G:\Org\HP2\Cals\DR090427JR.CAL
Sample Weight: 1000 Dilution: 50 S.A.: 1

Mean RF for Total Extractable Hydrocarbons: 29998.05
Rt range for Diesel Range Organics (C10 to C28): 6.67 to 16.44

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.757	.2	.303	151.74	-
*1-Chloro-octadecane	13.565	.2	.191	95.39	-

DRO Area:3.534394E+07 DRO AMOUNT: 58.91039
TEH Area:4.789469E+07 TEH AMOUNT: 79.82966

TP 24-3 MW-3 Batch ID: 45734



DIESEL RANGE ORGANICS CHROMATOGRAM

Sample Name: B10041458-003A ;0419HP3 , $HC-DRO-API-W, V52
Raw File: G:\org\HP3\DAT\HP3041910_b\0419HP3.0052.RAW
Date & Time Acquired: 4/21/2010 4:09:07 PM
Method File: G:\Org\HP3\Methods\DR000AE%.met
Calibration File: G:\Org\HP3\Cals\DR100112AE.CAL
Sample Weight: 1000 Dilution: 1 S.A.: 1

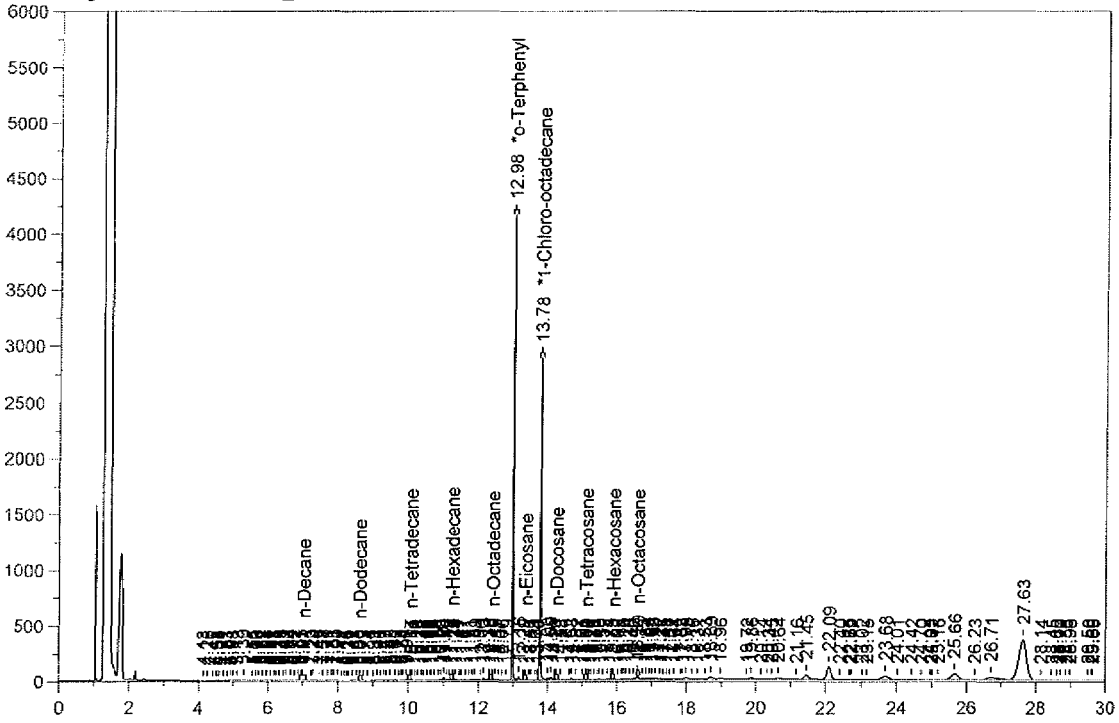
Mean RF for Total Extractable Hydrocarbons: 29437.91
Rt range for Diesel Range Organics (C10 to C28): 6.91 to 16.652

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.987	.2	.155	77.64	-
*1-Chloro-octadecane	13.785	.2	.112	55.88	-

DRO Area:457452.9 DRO AMOUNT: 1.553959E-02
TEH Area:2078095 TEH AMOUNT: 7.059247E-02

TP 24-3 MW-4 Batch ID: 45734

— G:\org\HP3\DAT\HP3041910_b\0419HP3.0054.RAW B10041458-004A ;0419HP3 , $HC-DRO-API-W, V54



DIESEL RANGE ORGANICS CHROMATOGRAM

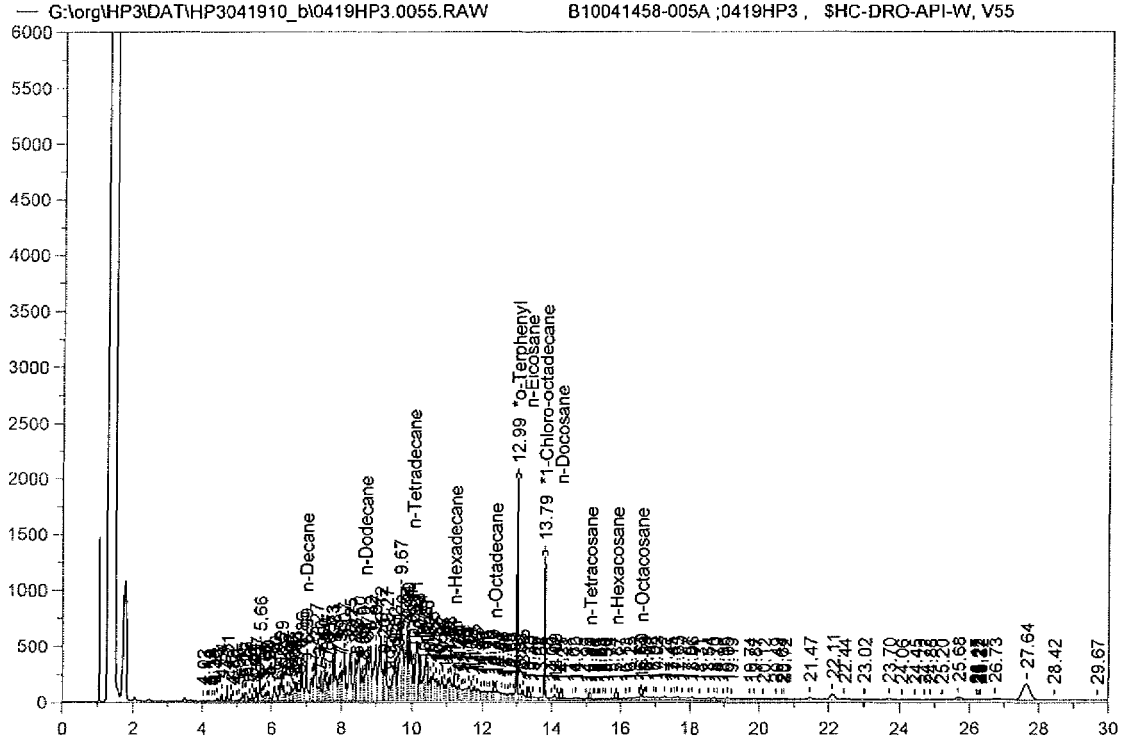
Sample Name: B10041458-004A ;0419HP3 , $HC-DRO-API-W, V54
Raw File: G:\org\HP3\DAT\HP3041910_b\0419HP3.0054.RAW
Date & Time Acquired: 4/21/2010 6:16:52 PM
Method File: G:\Org\HP3\Methods\D3000AE%.met
Calibration File: G:\Org\HP3\Cals\DR100112AE.CAL
Sample Weight: 1000 Dilution: 1 S.A.: 1

Mean RF for Total Extractable Hydrocarbons: 29437.91
Rt range for Diesel Range Organics (C10 to C28): 6.91 to 16.652

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.982	.2	.215	107.33	-
*1-Chloro-octadecane	13.78	.2	.217	108.7	-

DRO Area:3433152 DRO AMOUNT: 0.1166235
TEH Area:1.787237E+07 TEH AMOUNT: 0.6071209

TP 24-3 MW-5 Batch ID: 45734



DIESEL RANGE ORGANICS CHROMATOGRAM

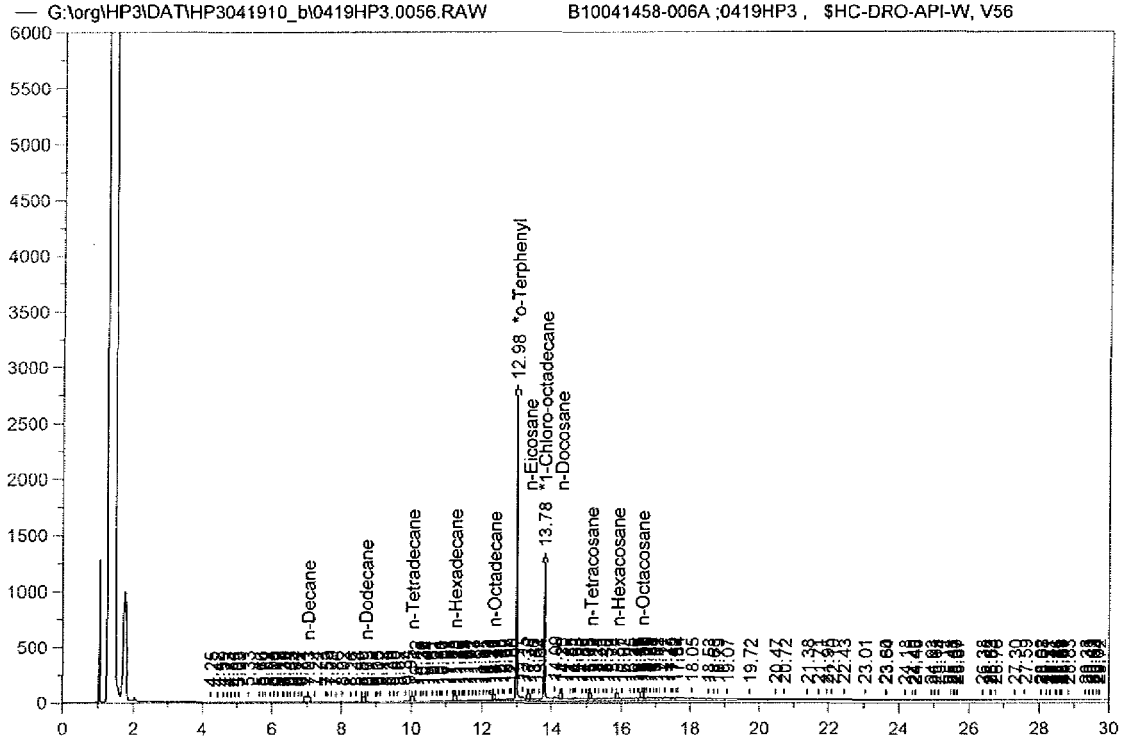
Sample Name: B10041458-005A ;0419HP3 , $HC-DRO-API-W, V55
Raw File: G:\org\HP3\DAT\HP3041910_b\0419HP3.0055.RAW
Date & Time Acquired: 4/21/2010 7:11:07 PM
Method File: G:\Org\HP3\Methods\D3000AE%.met
Calibration File: G:\Org\HP3\Cals\DR100112AE.CAL
Sample Weight: 1000 Dilution: 1 S.A.: 1

Mean RF for Total Extractable Hydrocarbons: 29437.91
Rt range for Diesel Range Organics (C10 to C28): 6.91 to 16.652

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.985	.2	.109	54.32	-
*1-Chloro-octadecane	13.788	.2	.099	49.48	-

DRO Area:7.629355E+07 DRO AMOUNT: 2.591677
TEH Area:9.560348E+07 TEH AMOUNT: 3.247632

TP 24-3 MW-6 Batch ID: 45734
— G:\org\HP3\DAT\HP3041910_b\0419HP3.0056.RAW B10041458-006A ;0419HP3 , $HC-DRO-API-W, V56



DIESEL RANGE ORGANICS CHROMATOGRAM

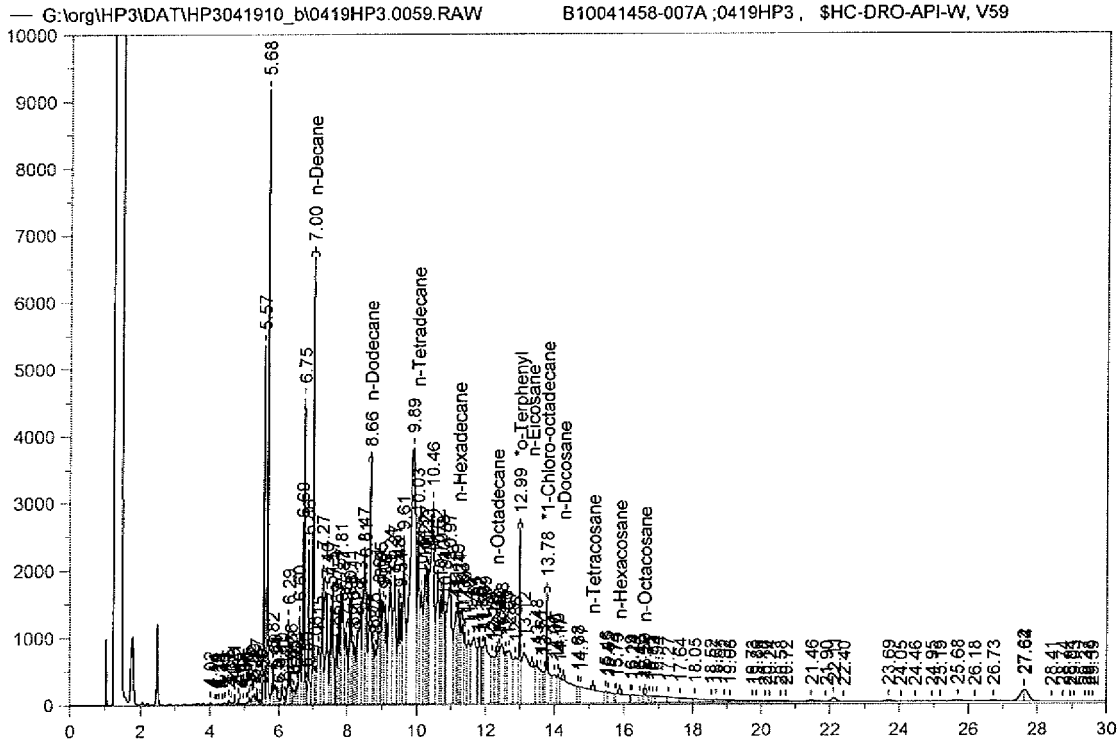
Sample Name: B10041458-006A ;0419HP3 , $HC-DRO-API-W, V56
Raw File: G:\org\HP3\DAT\HP3041910_b\0419HP3.0056.RAW
Date & Time Acquired: 4/21/2010 8:05:31 PM
Method File: G:\Org\HP3\Methods\DR041956AE%.met
Calibration File: G:\Org\HP3\Cals\DR100112AE.CAL
Sample Weight: 1000 Dilution: 1 S.A.: 1

Mean RF for Total Extractable Hydrocarbons: 29437.91
Rt range for Diesel Range Organics (C10 to C28): 6.91 to 16.652

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.98	.2	.152	75.99	-
*1-Chloro-octadecane	13.778	.2	.12	59.97	-

DRO Area:6225639 DRO AMOUNT: 0.2114837
TEH Area:1.366457E+07 TEH AMOUNT: 0.4641829

TP 24-3 MW-7 Batch ID: 45734
— G:\org\HP3\DAT\HP3041910_b\0419HP3.0059.RAW B10041458-007A ;0419HP3 , $HC-DRO-API-W, V59



DIESEL RANGE ORGANICS CHROMATOGRAM

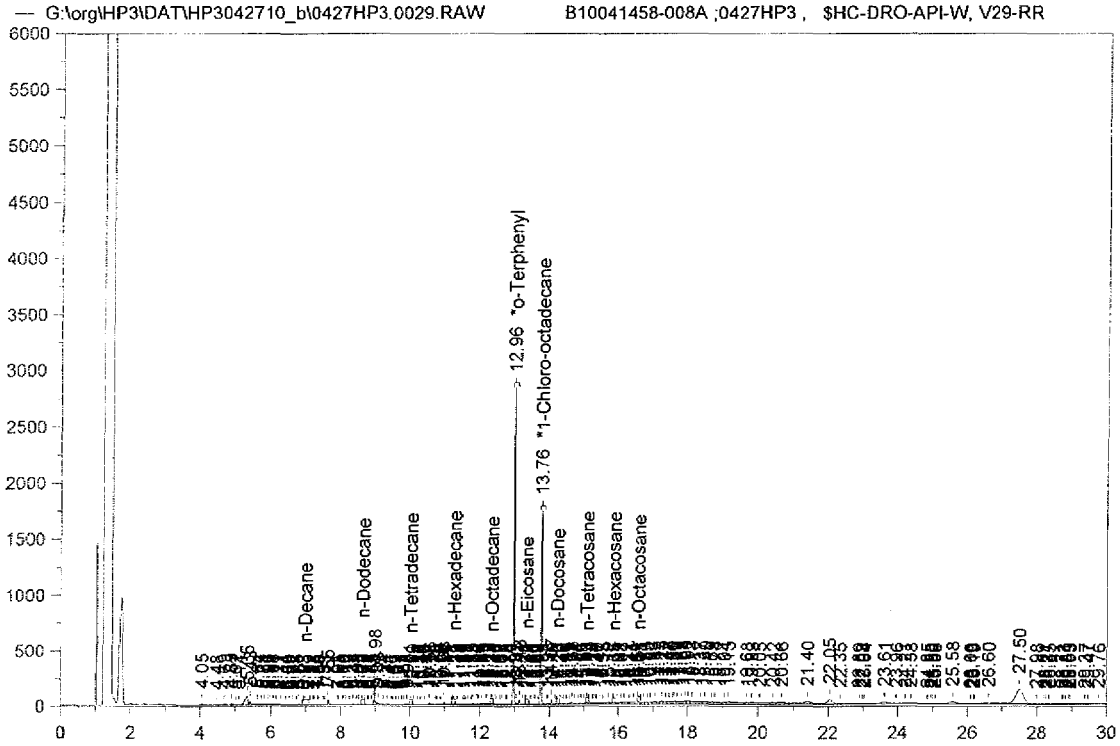
Sample Name: B10041458-007A ;0419HP3 , $HC-DRO-API-W, V59
Raw File: G:\org\HP3\DAT\HP3041910_b\0419HP3.0059.RAW
Date & Time Acquired: 4/21/2010 10:49:28 PM
Method File: G:\Org\HP3\Methods\DR041959AE%.met
Calibration File: G:\Org\HP3\Cals\DR100112AE.CAL
Sample Weight: 1000 Dilution: 1 S.A.: 1

Mean RF for Total Extractable Hydrocarbons: 29437.91
Rt range for Diesel Range Organics (C10 to C28): 6.91 to 16.652

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.989	.2	.197	98.52	-
*1-Chloro-octadecane	13.783	.2	.261	130.68	-

DRO Area:4.961249E+08 DRO AMOUNT: 16.85327
TEH Area:5.786271E+08 TEH AMOUNT: 19.65585

TP 24-3 MW-8A Batch ID: 45734



DIESEL RANGE ORGANICS CHROMATOGRAM

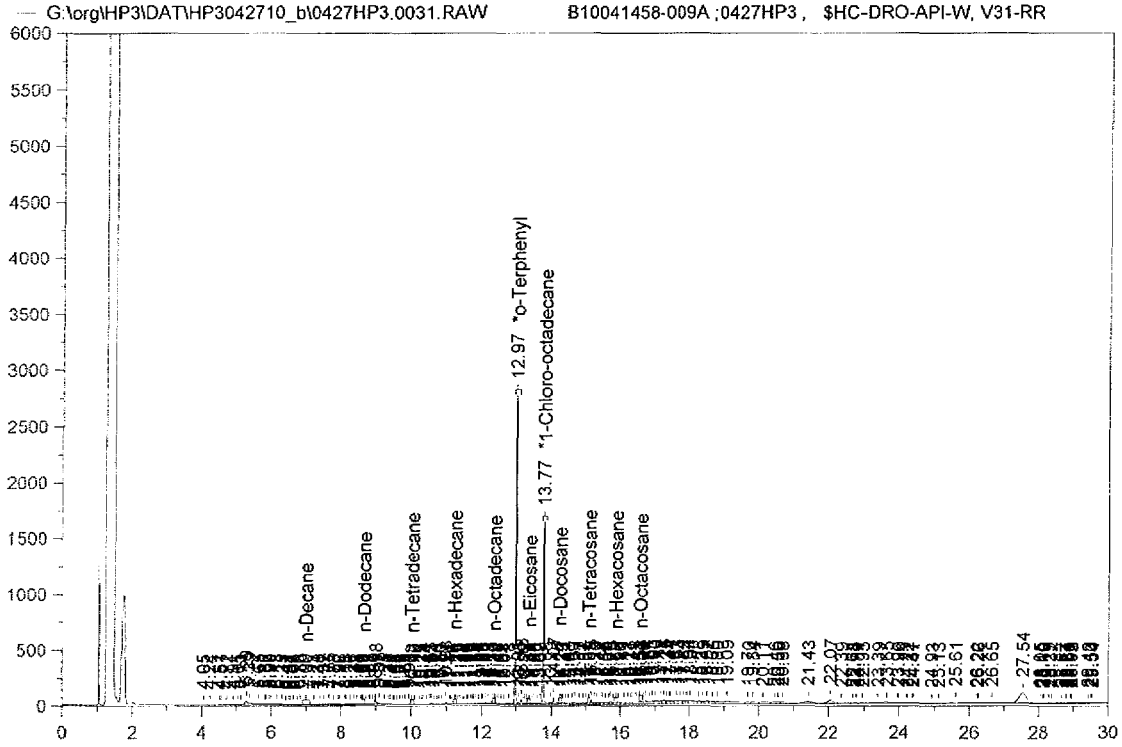
Sample Name: B10041458-008A ;0427HP3 , $HC-DRO-API-W, V29-RR
Raw File: G:\org\HP3\DAT\HP3042710_b\0427HP3.0029.RAW
Date & Time Acquired: 4/28/2010 5:42:38 PM
Method File: G:\Org\HP3\Methods\D3000AE%.met
Calibration File: G:\Org\HP3\Cals\DR100112AE.CAL
Sample Weight: 1000 Dilution: 1 S.A.: 1

Mean RF for Total Extractable Hydrocarbons: 29437.91
Rt range for Diesel Range Organics (C10 to C28): 6.91 to 16.652

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.963	.2	.141	70.38	-
*1-Chloro-octadecane	13.761	.2	.126	63.17	-

DRO Area:3569690 DRO AMOUNT: 0.1212617
TEH Area:1.391138E+07 TEH AMOUNT: 0.472567

TP 24-3 MW-8B Batch ID: 45734



DIESEL RANGE ORGANICS CHROMATOGRAM

Sample Name: B10041458-009A ;0427HP3 , $HC-DRO-API-W, V31-RR
Raw File: G:\org\HP3\DAT\HP3042710_b\0427HP3.0031.RAW
Date & Time Acquired: 4/28/2010 7:32:50 PM
Method File: G:\Org\HP3\Methods\D3000AE%.met
Calibration File: G:\Org\HP3\Cals\DR100112AE.CAL
Sample Weight: 1000 Dilution: 1 S.A.: 1

Mean RF for Total Extractable Hydrocarbons: 29437.91
Rt range for Diesel Range Organics (C10 to C28): 6.91 to 16.652

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.97	.2	.14	69.94	-
*1-Chloro-octadecane	13.768	.2	.123	61.63	-

DRO Area:4110206 DRO AMOUNT: 0.1396229
TEH Area:1.469718E+07 TEH AMOUNT: 0.4992604

Shipping container/cooler in good condition?	Yes	No
Custody seals intact on shipping container/cooler?	Yes	No
Custody seals intact on sample bottles?	Yes	No
Chain of custody present?	Yes	No
Chain of custody signed when relinquished and received?	Yes	No
Chain of custody agrees with sample labels?	Yes	No
Samples in proper container/bottle?	Yes	No
Sample containers intact?	Yes	No
Sufficient sample volume for indicated test?	Yes	No
All samples received within holding time?	Yes	No
Container/Temp Blank temperature:		
Water - VOA vials have zero headspace?	Yes	No
Water - pH acceptable upon receipt?	Yes	No

Chain of Custody and Analytical Request Record

ENERGY LABORATORIES

PLEASE PRINT (Provide as much information as possible.)

Company Name: Encana Oil & Gas (USA) Inc	Project Name, PWS, Permit, Etc.: Tribal Pavillion 24-3 (CURP)	Sample Origin State:	EPA/State Compliance: Yes ☐ No ☐
Report Mail Address:	Contact Name: Mike Larson Phone/Fax: 406 579 8585 Email: mlarson@kcheney.com		Sampler: (Please Print) S. Matolyak
Invoice Address: PO Box 1177 Riverton WY 82501	Invoice Contact & Phone:	Purchase Order:	Quote/Bottle Order:

Special Report/Formats:

☐ DW ☐ EDD/EDT (Electronic Data)
☐ POTW/WWTP Format: _____
☐ State: _____ ☐ LEVEL IV
☐ Other: _____ ☐ NELAC

- per labels 3 4/16/10

4/14/10

Number of Containers
Sample Type: A W S V B O DW
Air Water Soils/Solids
Vegetation Bioassay Other
DW - Drinking Water

ANALYSIS REQUESTED

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	See bottle order	SEE ATTACHED	Standard Turnaround (TAT)
1	Tp 24-3 MW-1	3-29-10	13:00	GW	X		X
2	-2		14:00				
1	-3		13:20				
2	-4		14:30				
1	-5		12:30				
1	-6		12:00				
2	-7		15:00				
2	-8A		15:45				
2	-8B		15:59				
	10 TB1 TS02416 TB2 TS02416	3-29-10 3-30-10					

R U S H — Contact ELI prior to **RUSH** sample submittal for charges and scheduling – See Instruction Page

Comments:
20% discount
Thanks!

Please call Mike Larson for invoice, Purchase order info

* DRO + GRO by API method per project history (ok by Wynn) (JJ) 4/16/10

Cooler ID(s): UPS GRO x1 UPS GRO x1

Receipt Temp: 3 °C

On Ice: (Y) N

Custody Seal: On Bottle Y (N) / On Cooler (Y) N

Intact (Y) N

Signature Match (Y) N

LABORATORY USE ONLY

1004 1458-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11

Custody Record MUST be Signed

Relinquished by (print): Shane Matolyak	Date/Time: 4-14-10/17:15	Signature:	Received by (print):	Date/Time:	Signature:
Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
			Received by Laboratory:	Date/Time: 4-16-10 9:02	Signature:

Sample Disposal: Return to Client: _____ Lab Disposal: _____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested.
This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.
Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

ENERGY LABORATORIES, INC. * 1120 S 27th St * PO Box 30916 * Billings, MT 59107-0916
Toll Free 800.735.4489 * 406.252.6325 * FAX 406.252.6069 * eli@energylab.com

BOTTLE ORDER 39787

SHIPPED TO: KC Harvey Inc

Contact: Shane
376 Gallatin Park Drive
Bozeman MT 57915

Phone:

Project:

Order Created by: gmccartney

Ship Date: 4/6/2010
VIA: Ground

Bottle Size/Type	Bottles Per Samp	Method	Tests	Critical Hold Time	Preservative	Notes	Num of Samp
40 mL Clear Glass VOA	3	SW8260B	8260-Volatile Organic Compounds-Short List		HCL		25
1 Liter Amber Glass Narrow Mouth	2	SW8015B	Diesel Range Organics		H2SO4		25
40 mL Clear Glass VOA	3	SW8015B	Gasoline Range Organics		HCL		25

Comments

If you need the VOC-8260 with a different analyte list that short, please let us know.

■ HNO3 - Nitric Acid ■ H2SO4 - Sulfuric Acid ■ NaOH - Sodium Hydroxide
■ ZnAc - Zinc Acetate ■ HCl - Hydrochloric Acid ☐ H3PO4 - Phosphoric Acid

We strongly suggest that the samples are shipped the same day as they are collected.

Material Safety Data Sheets(MSDS) Available @ EnergyLab.com ->Services -> MSDS Sheets

Corrosive Chemicals: Nitric, Sulfuric, Phosphoric, Hydrochloric Acids and Sodium Hydroxide. Zinc Acetate is a skin irritant.

Subcontracting of sample analyses to an outside laboratory may be required. If so, Energy Laboratories will utilize its branch laboratories or qualified contract laboratories for this service. Any such laboratories will be indicated within the Laboratory Analytical Report.

ANALYTICAL SUMMARY REPORT

June 23, 2010

Encana Oil and Gas USA
462 S Federal
Riverton, WY 82501-4732

Workorder No.: C10060614

Project Name: Pavillion WRP Site 24-3

Energy Laboratories, Inc. received the following 2 samples for Encana Oil and Gas USA on 6/16/2010 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C10060614-001	24-3 MW-9	06/15/10 12:30	06/16/10	Aqueous	1664 Prep Code Liquid-Liquid Extraction Diesel Range Organics Gasoline Range Organics E1664A Total Petroleum Hydrocarbons SW8260B VOCs, BTEX
C10060614-002	Trip Blank	06/15/10 12:30	06/16/10	Aqueous	SW8260B VOCs, BTEX

This report was prepared by Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

LABORATORY ANALYTICAL REPORT

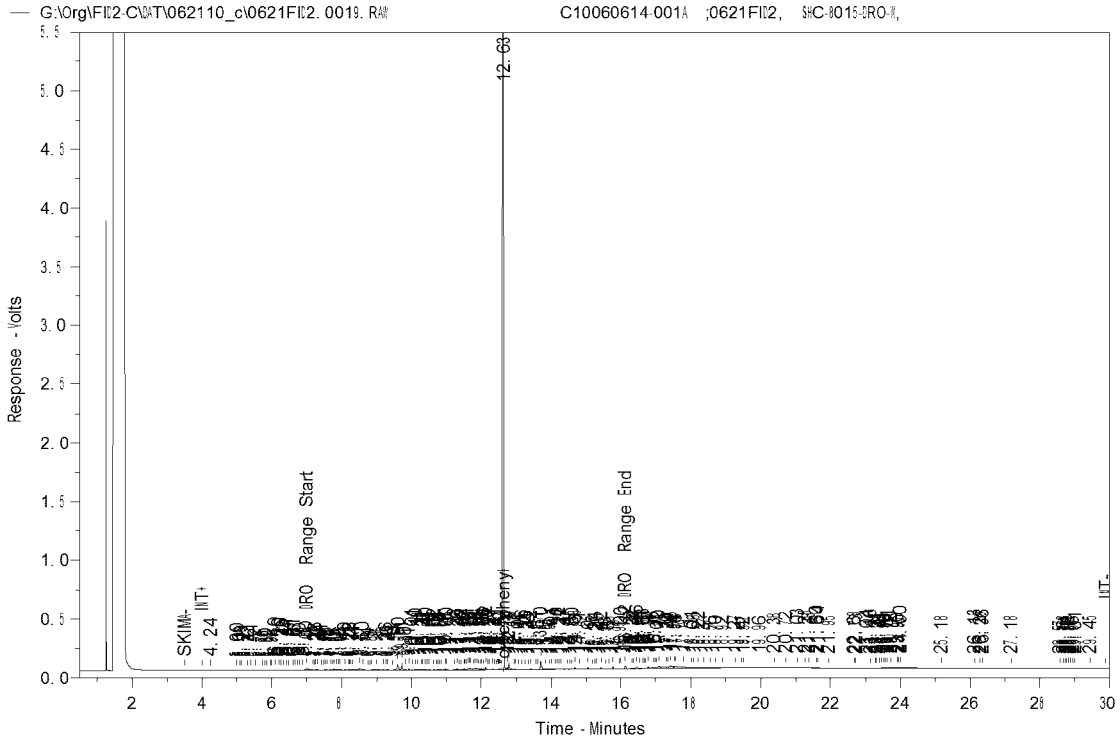
Client: Encana Oil and Gas USA
Project: Pavillion WRP Site 24-3
Lab ID: C10060614-001
Client Sample ID: 24-3 MW-9

Report Date: 06/23/10
Collection Date: 06/15/10 12:30
DateReceived: 06/16/10
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Benzene	ND	ug/L		1.0		SW8260B	06/21/10 19:16 / jlr
Ethylbenzene	ND	ug/L		1.0		SW8260B	06/21/10 19:16 / jlr
m+p-Xylenes	ND	ug/L		1.0		SW8260B	06/21/10 19:16 / jlr
o-Xylene	ND	ug/L		1.0		SW8260B	06/21/10 19:16 / jlr
Toluene	ND	ug/L		1.0		SW8260B	06/21/10 19:16 / jlr
Xylenes, Total	ND	ug/L		1.0		SW8260B	06/21/10 19:16 / jlr
Surr: 1,2-Dichlorobenzene-d4	105	%REC		80-120		SW8260B	06/21/10 19:16 / jlr
Surr: Dibromofluoromethane	112	%REC		70-130		SW8260B	06/21/10 19:16 / jlr
Surr: p-Bromofluorobenzene	114	%REC		80-120		SW8260B	06/21/10 19:16 / jlr
Surr: Toluene-d8	102	%REC		80-120		SW8260B	06/21/10 19:16 / jlr
ORGANIC CHARACTERISTICS							
Diesel Range Organics (DRO)	ND	mg/L		1.0		SW8015B	06/21/10 23:42 / bah
Surr: o-Terphenyl	39.0	%REC	S	50-150		SW8015B	06/21/10 23:42 / bah
Gasoline Range Organics (GRO)	ND	mg/L		0.040		SW8015B	06/17/10 22:36 / mlf
Surr: Trifluorotoluene	100	%REC		70-130		SW8015B	06/17/10 22:36 / mlf
Non-polar Materials (SGT-HEM)	ND	mg/L		5.1		E1664A	06/17/10 09:22 / ph

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
S - Spike recovery outside of advisory limits.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

Batch ID: 26439



DIESEL RANGE ORGANICS CHROMATOGRAM

Sample Name: C10060614-001A ;0621FID2, $HC-8015-DRO-W,
Raw File: G:\Org\FID2-C\DAT\062110_c\0621FID2.0019.RAW
Date & Time Acquired: 6/21/2010 23:42:54
Method File: G:\org\FID2-C\Methods\FID2_BASE_CAL_050510_R1.met
Calibration File: G:\org\FID2-C\Cals\FID2_050510_R1.CAL
Sample Weight: 984 Dilution: 1 S.A.: 1

Mean RF for Hydrocarbon Range Calculations: 26471.92
Rt range for Diesel Range Organics (C10 to C28): 6.9 to 16.21
Rt range for Oil Range Organics (C28 to C40+): 16.07 to End Time

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.63	2.033	.79	38.87	-

DRO Area:1960499 DRO AMOUNT: 7.526378E-02
TEH Area:3842986 TEH AMOUNT: 0.1475327
Oil Area:1858725 OIL AMOUNT: 7.135668E-02

LABORATORY ANALYTICAL REPORT

Client: Encana Oil and Gas USA
Project: Pavillion WRP Site 24-3
Lab ID: C10060614-002
Client Sample ID: Trip Blank

Report Date: 06/23/10
Collection Date: 06/15/10 12:30
DateReceived: 06/16/10
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Benzene	ND	ug/L		1.0		SW8260B	06/21/10 19:52 / jlr
Ethylbenzene	ND	ug/L		1.0		SW8260B	06/21/10 19:52 / jlr
m+p-Xylenes	ND	ug/L		1.0		SW8260B	06/21/10 19:52 / jlr
o-Xylene	ND	ug/L		1.0		SW8260B	06/21/10 19:52 / jlr
Toluene	ND	ug/L		1.0		SW8260B	06/21/10 19:52 / jlr
Xylenes, Total	ND	ug/L		1.0		SW8260B	06/21/10 19:52 / jlr
Surr: 1,2-Dichlorobenzene-d4	108	%REC		80-120		SW8260B	06/21/10 19:52 / jlr
Surr: Dibromofluoromethane	104	%REC		70-130		SW8260B	06/21/10 19:52 / jlr
Surr: p-Bromofluorobenzene	122	%REC	S	80-120		SW8260B	06/21/10 19:52 / jlr
Surr: Toluene-d8	101	%REC		80-120		SW8260B	06/21/10 19:52 / jlr

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
S - Spike recovery outside of advisory limits.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Encana Oil and Gas USA
Project: Pavillion WRP Site 24-3

Report Date: 06/23/10
Work Order: C10060614

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E1664A										Batch: 26420
Sample ID: C10060696-001DMS		Sample Matrix Spike				Run: OG_BAL1-C_100617A				06/17/10 09:22
Non-polar Materials (SGT-HEM)		14	mg/L	5.0	68	64	132			
Sample ID: C10060696-001DMSD		Sample Matrix Spike Duplicate				Run: OG_BAL1-C_100617A				06/17/10 09:22
Non-polar Materials (SGT-HEM)		14	mg/L	5.0	71	64	132	4.6	34	
Sample ID: MBLK1_100617A		Method Blank				Run: OG_BAL1-C_100617A				06/17/10 09:10
Non-polar Materials (SGT-HEM)		ND	mg/L	5.0						
Sample ID: LCS1_100617A		Laboratory Control Sample				Run: OG_BAL1-C_100617A				06/17/10 09:10
Non-polar Materials (SGT-HEM)		15	mg/L	5.0	73	64	132			
Sample ID: LCSD_100617A		Laboratory Control Sample Duplicate				Run: OG_BAL1-C_100617A				06/17/10 00:00
Non-polar Materials (SGT-HEM)		17	mg/L	5.0	86	64	132	16	34	

Qualifiers:
RL - Analyte reporting limit.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Encana Oil and Gas USA
Project: Pavillion WRP Site 24-3

Report Date: 06/23/10
Work Order: C10060614

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8015B										Batch: 26439
Sample ID: MB-26439	2	Method Blank				Run: FID2-C_100621A				06/21/10 11:20
Diesel Range Organics (DRO)		ND	mg/L	1.0						
Surr: o-Terphenyl				0.20	79	50	150			
Sample ID: LCS-26439	2	Laboratory Control Sample				Run: FID2-C_100621A				06/21/10 12:07
Diesel Range Organics (DRO)		16.0	mg/L	1.0	80	60	140			
Surr: o-Terphenyl				0.20	83	50	150			
Sample ID: LCSD-26439	2	Laboratory Control Sample Duplicate				Run: FID2-C_100621A				06/21/10 12:53
Diesel Range Organics (DRO)		16.9	mg/L	1.0	84	60	140	5.3	20	
Surr: o-Terphenyl				0.20	90	50	150			
Sample ID: C10060678-001BMS	2	Sample Matrix Spike				Run: FID2-C_100621A				06/21/10 14:26
Diesel Range Organics (DRO)		18.4	mg/L	1.0	78	60	140			
Surr: o-Terphenyl				0.21	63	50	150			
Sample ID: C10060678-001BMSD	2	Sample Matrix Spike Duplicate				Run: FID2-C_100621A				06/21/10 15:12
Diesel Range Organics (DRO)		17.5	mg/L	1.0	76	60	140	4.9	20	
Surr: o-Terphenyl				0.21	53	50	150			
Method: SW8015B										Batch: R133981
Sample ID: LCS_0617HP107r	2	Laboratory Control Sample				Run: PIDELCD1-C_100617A				06/17/10 13:36
Total Purgeable Hydrocarbons		0.208	mg/L	0.020	104	70	130			
Surr: Trifluorotoluene				0.0020	99	70	130			
Sample ID: MBLK_0617HP108r	3	Method Blank				Run: PIDELCD1-C_100617A				06/17/10 14:12
Gasoline Range Organics (GRO)		ND	mg/L	0.020						
Total Purgeable Hydrocarbons		ND	mg/L	0.020						
Surr: Trifluorotoluene				0.0020	103	70	130			
Sample ID: C10060614-001CMS	2	Sample Matrix Spike				Run: PIDELCD1-C_100617A				06/17/10 23:13
Total Purgeable Hydrocarbons		3.96	mg/L	0.40	99	70	130			
Surr: Trifluorotoluene				0.040	102	70	130			
Sample ID: C10060614-001CMSD	2	Sample Matrix Spike Duplicate				Run: PIDELCD1-C_100617A				06/17/10 23:49
Total Purgeable Hydrocarbons		4.16	mg/L	0.40	104	70	130	4.8	20	
Surr: Trifluorotoluene				0.040	103	70	130			

Qualifiers:
RL - Analyte reporting limit.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Encana Oil and Gas USA
Project: Pavillion WRP Site 24-3

Report Date: 06/23/10
Work Order: C10060614

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R134105
Sample ID: 21-Jun-10_LCS_3	10	Laboratory Control Sample				Run: 5975VOC1_100621A				06/21/10 12:41
Benzene		11	ug/L	1.0	110	70	130			
Ethylbenzene		11	ug/L	1.0	112	70	130			
m+p-Xylenes		24	ug/L	1.0	118	70	130			
o-Xylene		12	ug/L	1.0	120	70	130			
Toluene		12	ug/L	1.0	117	70	130			
Xylenes, Total		36	ug/L	1.0	119	70	130			
Surr: 1,2-Dichlorobenzene-d4				1.0	98	80	120			
Surr: Dibromofluoromethane				1.0	96	70	130			
Surr: p-Bromofluorobenzene				1.0	109	80	120			
Surr: Toluene-d8				1.0	107	80	120			
Sample ID: 21-Jun-10_MBLK_6	10	Method Blank				Run: 5975VOC1_100621A				06/21/10 14:28
Benzene		ND	ug/L	1.0						
Ethylbenzene		ND	ug/L	1.0						
m+p-Xylenes		ND	ug/L	1.0						
o-Xylene		ND	ug/L	1.0						
Toluene		ND	ug/L	1.0						
Xylenes, Total		ND	ug/L	1.0						
Surr: 1,2-Dichlorobenzene-d4				1.0	106	80	120			
Surr: Dibromofluoromethane				1.0	100	70	130			
Surr: p-Bromofluorobenzene				1.0	118	80	120			
Surr: Toluene-d8				1.0	100	80	120			
Sample ID: C10060661-007BMS	10	Sample Matrix Spike				Run: 5975VOC1_100621A				06/21/10 21:04
Benzene		68	ug/L	5.0	109	70	130			
Ethylbenzene		52	ug/L	5.0	104	70	130			
m+p-Xylenes		110	ug/L	5.0	109	70	130			
o-Xylene		57	ug/L	5.0	113	70	130			
Toluene		55	ug/L	5.0	110	70	130			
Xylenes, Total		170	ug/L	5.0	110	70	130			
Surr: 1,2-Dichlorobenzene-d4				1.0	101	80	120			
Surr: Dibromofluoromethane				1.0	98	70	130			
Surr: p-Bromofluorobenzene				1.0	112	80	120			
Surr: Toluene-d8				1.0	110	80	120			
Sample ID: C10060661-007BMSD	10	Sample Matrix Spike Duplicate				Run: 5975VOC1_100621A				06/21/10 21:39
Benzene		68	ug/L	5.0	109	70	130	0	20	
Ethylbenzene		53	ug/L	5.0	106	70	130	1.9	20	
m+p-Xylenes		110	ug/L	5.0	111	70	130	2.1	20	
o-Xylene		58	ug/L	5.0	117	70	130	3.1	20	
Toluene		56	ug/L	5.0	111	70	130	0.7	20	
Xylenes, Total		170	ug/L	5.0	113	70	130	2.5	20	
Surr: 1,2-Dichlorobenzene-d4				1.0	103	80	120	0	10	
Surr: Dibromofluoromethane				1.0	97	70	130	0	10	
Surr: p-Bromofluorobenzene				1.0	112	80	120	0	10	
Surr: Toluene-d8				1.0	108	80	120	0	10	

Qualifiers:
RL - Analyte reporting limit.
ND - Not detected at the reporting limit.

Shipping container/cooler in good condition?	Yes
Custody seals intact on shipping container/cooler?	Yes
Custody seals intact on sample bottles?	Yes
Chain of custody present?	Yes
Chain of custody signed when relinquished and received?	Yes
Chain of custody agrees with sample labels?	
Samples in proper container/bottle?	
Sample containers intact?	
Sufficient sample volume for indicated test?	
All samples received within holding time?	
Container/Temp Blank temperature:	
Water - VOA vials have zero headspace?	
Water - pH acceptable upon receipt?	Yes

Chain of Custody and Analytical Request Record

ENERGY LABORATORIES

Page _____ of _____

PLEASE PRINT (Provide as much information as possible.)

Company Name:	Project Name, PWS, Permit, Etc.	Sample Origin	EPA/State Compliance:
EnCana	Pavillion VRP site 24-3	State:	Yes ☐ No ☐
Report Mail Address: Attn: Mike Larson P.O. Box 1177 Riverton, WY 82501	**Contact Name:** Mike Larson **Phone/Fax:** 406-579-8585 **Email:** MikeLarson@Encana.com		**Sampler: (Please Print)** Jamie Kukuk (Enberg-Miller)
Invoice Address: Same as above	**Invoice Contact & Phone:** Steve Mansur 406-579-8585	**Purchase Order:**	**Quote/Bottle Order:** 30514

Special Report/Formats:

- ☐ DW
- ☐ POTW/WWTP
- ☐ State: _____
- ☐ Other: _____
- ☑ EDD/EDT (Electronic Data) **Format:** WDEQ
- ☐ LEVEL IV committed
- ☐ NELAC

Number of Containers
Sample Type: A Air, W Water, S Soils/Solids, V Vegetation, B Bioassay, O Other
DW - Drinking Water

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	TPH GRO/DRO method 8015B	BTEX method 8260	SEE ATTACHED	Standard Turnaround (TAT)
1 24-3 MW-9	6/15/10	12:30	Wq	Y	Y		Y
2 Trip Blank							
3 per Continuous Emc							
4							
5							
6							
7							
8							
9							
10							

RUSH

Contact ELI prior to **RUSH** sample submittal for charges and scheduling – See Instruction Page

Comments:

Shipped by: Hand

Cooler ID(s): C18C68

Receipt Temp 0 °C

On Ice: (Y) N

Custody Seal On Bottle Y (N) On Cooler Y N

Intact Y N

Signature Match Y N

LABORATORY USE ONLY C10060614

Custody Record MUST be Signed

Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
Jamie Kukuk	6/16/10 8:00				
Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
			Received by Laboratory:	6/16/10 802	

Sample Disposal: Return to Client: _____ Lab Disposal: _____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested.
This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.
Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.